Journal of FORESTRY

SOCIETY OF AMERICAN FORESTERS 1900

A PROFESSIONAL JOURNAL DEVOTED TO ALL BRANCHES OF FORESTRY

VOLUME 47 No. 2 FEBRUARY 1949

Published by the SOCIETY OF AMERICAN FORESTERS

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Journal of Forestry

Official Organ of the Society of American Foresters

Editorial

Who Will Control the Public Ranges?

THE first phase of the new struggle for control of grazing on public lands ended with the Barrett Committee Report to the House of Representatives, dated August 7, 1948. This report recommends:

1. That the Forest Act be amended to provide that grazing, recreation, and wildlife be made basic uses of national forest lands.
2. That advisory boards on the national forest be given legal status.
3. That the present policy of transfer cuts be discontinued, and that any cuts that may be necessary be made for protection purposes only.
4. That the Forest Service undertake a vigorous program of range improvement including (a) water development, (b) reseeding, (c) fencing, and (d) rodent and poisonous weed control.
5. That the Forest Service undertake a policy that will enable the permittees to participate in and contribute to a greatly extended range improvement program.

It contains the further interesting statement:

"At the outset, let us point out that our committee is fully cognizant of the importance of watershed protection, the conservation of wildlife, and the development of recreational areas in the national forests. This committee is unalterably opposed to overgrazing wherever it is practiced. Our committee heard extensive testimony from all viewpoints concerning the effect of livestock grazing upon forest range lands and watershed. The basic purpose underlying the creation of our national forests was the protection of our timber resources and watersheds. By reason of their tremendous importance to the Nation as a whole, our committee is of the unanimous opinion that our national forests should not be sold to private ownership or transferred to the States, but should remain in Federal ownership."

Most of the recommendations are apparently mainly for "fence building." Grazing, recreation, and wildlife have always been recognized as important national forest uses, but not to take precedence over soil and watershed protection or timber production where the latter is important. Forest Service range policy includes water development, reseeding, and other range improvements. The Forest Service seeks cooperation with stockmen to help stabilize the livestock industry.

Understanding between stockmen and Forest Service officials is cordial and mutually respectful on grazing ranges that are in good and improving condition. It remains tense where the range is progressively deteriorating. Stockmen as a group have persistently minimized or ignored signs of deterioration clearly evident to anyone with knowledge of plant ecology, soils, and soil erosion. This deterioration is readily demonstrable through infiltration tests and by comparison with protected areas.

Recovery is often rapid and astonishingly gratifying on areas protected for a few years against grazing by fencing. On the other hand, on many watershed slopes so much soil has been lost and soil erosion continues at such rapid rate that natural establishment of a protective vegetal cover is very slow, even when all grazing is removed. Active programs of reseeding, artificial terracing, and the like appear to be the only solution in preventing complete soil loss from these critical areas. Certainly the Forest Service has little justification for continuing to allow such slopes to be grazed in their present condition.

The real danger to the public interest lies not in the fact that reductions in national forest grazing permits for a few years may reduce slightly the national meat supply. The danger lies, rather, in the fact that reductions in a number of cases have not come soon enough nor are they sufficiently drastic to prevent permanent damage on wide areas of good range.

But to brush aside the Barrett Committee Report, and the hearings on which it is based, as entirely unjustified is to deny its significance. It is a protest against the Forest Service and a vigorous one. It bespeaks the need to reexamine policy, practice, and public understanding thereof. Certain facts stand out in the overall controversy that deserve more attention than either the Forest Service or the stockmen have cared to admit.

1. The early policies of helping the settler at

the expense of the large stockman. Reshaped policies have, however, eliminated this as a source of serious friction.

2. Charging a token fee for the grazing use rather than fees based on careful appraisals of range values. Grazing fees on national forests probably average considerably less than half of the fees charged on comparable private lands. Grazing fees should be raised for three reasons: a. Livestock growers who hold permits enjoy a subsidy not available to those who do not. b. As a result owned property tends to be capitalized so as to reflect the benefit of the difference between grazing fees and true economic value of grazing. c. Charging the true value of grazing would return more revenue to counties in lieu of taxes, provide more money for roads, increase revenue for range improvement, and reimburse the federal treasury more adequately for cost of administration. With fees low as they are it is small wonder that the rancher develops the feeling that he has a "right," one that should be transferable, in the grazing privilege. In this he has the support of banks that have loans on ranch lands.

3. Low public income from grazing land. Cattlemen are making much of the fact that large areas of public land yield no tax revenue. They claim also that the government spends too little to improve the range. By law twenty-five percent of all national forest receipts goes to the states for the benefit of roads and schools; an additional 10 percent for forest roads and trails. Twenty percent of the estimated grazing receipts is spent directly on range improvement. These should be ample if ranges were not badly depleted and if fees paid were equal to the value of the grazing privilege. But these revenues are but part of the benefits states enjoy from federal lands. For example, Utah receives annually from Taylor Grazing Districts $116,000 for use by counties, and $58,000 for range improvements; from the U. S. Forest Service $45,000 for counties and $18,000 for roads. But from the Bureau of Public Roads she received $1,500,000 in extra grants made to compensate for land held in federal ownership. States having less than 5 percent of their land area in federal ownership enjoy no extra benefit.

4. Retirement of marginal grazing lands. Some range lands are simply too steep, too dry, too highly erosive, and too valuable for watershed, recreation and other uses to justify attempting to graze them. Proposals by the Forest Service to retire some of these lands from grazing use have led to complaints of arbitrary action and charges that the Forest Service is trying to eliminate all grazing from national forests.

5. Remedial action is late. Much of the serious and widespread deterioration of national forest ranges and watersheds was done half a century or more ago, before the Forest Service was organized to administer these lands. Not only were ranges depleted then, but soil erosion has been continuing on many in the meantime. Why, then, have adequate remedies not been applied? It would appear that national forest officials have been consistently overoptimistic, attributing evidence of deterioration to "bad" years, overlooking the seriousness of erosion, and giving too much emphasis to temporary indication of "recovery" in "good" years. This continuing deterioration points to an obligation on the part of the Forest Service to get hold of the facts once and for all without further delay, and to plan an effective program.

6. Action of the Forest Service based on needs of the range rather than needs of the stockmen concerned. It is not the function of the Forest Service to deal with farm management and animal husbandry as applied to a ranching enterprise. Yet such an overall approach is needed if adjustments are to be made painless to stock grazers.

7. The Forest Service has not informed the public as fully as it might regarding the basis for its range management policies and actions. Much might be accomplished through organizing committees representative of stockmen, water users, summer home owners, commercial recreation interests, timber operators, bankers, and the general public, to develop on each important drainage area policies for protecting and improving mountain watersheds. Such committees in turn could serve as centers for informing all citizens of the resources at their command and their dependence one on another.

Where all public interests are fairly represented and soundly informed appropriate policies emerge with astounding consistency. Policies firmly rooted in widespread public understanding form a secure basis for action programs. Patience to be sure is required to inform the public, and to obtain from their representatives programs of action. But the larger risk of losing the entire battle for conservation programs is minimized.

Transport of Wood by Gravity Over Suspended Wire

A. Koroleff and C. R. Silversides

Respectively, director of Woodlands Research and Woodlands Research Associate, Pulp and Paper Research Institute of Canada, Montreal.

The writers describe a "gravity powered skyline" logging method for yarding wood. It is adapted to steep terrain and partial or clear-cutting systems. Erosion developing in skid trails is avoided.

THIS report recommends adaptation in rough terrain, of the gravity method of bringing wood down steep slopes over a suspended steel wire, as shown in Figure 1.[1] The recommendation is based on the studies carried out since 1944.

The described method is a logical one. With its proper application in suitable locations, it should prove more practical than our conventional procedures. This "skidding by wire" circumvents the multitude of obstructions characteristic of rough bottom areas, such as sharp inequalities of the ground, rocks and boulders, stumps, windfall, protruding roots, brush. This method obviates the need of making roads or even trails on steep slopes, where this calls for heavy work but gives only poor results. What is even more important, this new method turns to good advantage the severe handicap which steep grades impose on logging horses and teamsters (Fig. 2). The gravity force is not fought; it is harnessed.

Practically anyone, except perhaps a conditioned logger, is apt to be impressed by the amount of "bull work" performed by horses and teamsters in skidding or hauling wood down steep slopes. This work often endangers both the man and the beast. Not uncommonly, because of the roughness of the lower portion of the slope, the man and the horse for each load have to cover a distance many times as long as it would be if straight downhill. Finally, is it logical to struggle up and down an excessively steep hill, repeatedly, for each load when only one way transportation is required—down the hill—and this can be done with ease by gravity, as proposed in this report?

The low production and the exceedingly high actual cost of bringing wood down from very steep and rough ground are obscured by the fact that the contract price often applies to a rather large area, containing good, bad, and average conditions of topography. Yet in rough terrain considerable patches of good merchantable wood, that would be unprofitable to log with horses or by other means we are using, are left to rot on the stump. The total loss of such abandoned, "commercially inaccessible" timber certainly is not small. The use of the recommended gravity method should permit a large reduction —if not elimination—of this waste.

The recommended method has definite advantages from a conservation point of view. Steep hillsides are very vulnerable. Dragging of wood downhill, whether by animals or mechanically, is likely to cause some topsoil erosion, especially if the area is clear-cut. "Skidding by wire" is compatible with partial cutting. It does no damage to advance reproduction and does not disturb the soil.

Diagramatic sketch of a typical layout for "skidding by wire," shown in Figure 3, is based mainly upon two recent experimental operations at Creek Racine, near Beaupré, P.Q., on the limit of St. Anne Power Company, where 45 cords of wood were brought down by this method. The distance from the ridge to the stream is approximately 500 ft. The pulpwood runs about 12 cords per acre (¾ balsam, ¼ spruce). Because of very steep slope and rough bottom, it would be difficult to get it down by any of our conventional procedures. The wood is cut into 4-foot bolts, and the piles are placed for wire skidding in a straight line between sturdy trees, chosen in advance, to which the wire should be attached, upon the hill (spar trees, Fig. 1a) and on the stream bank (tail trees, Fig. 1b). Spar trees are about 70 ft. apart; tail trees are spaced as convenient and sometimes one of them may serve several spars. In the trial, in most of the cases, the gradient of a straight line between the spar and tail tree[2] was from 40 to 60 percent.

A coil of steel wire is taken to a spar tree and one end fastened; the wire is stretched down and attached to the tail tree, then tightened. There

[1]The illustrations are made by Rene Kulbach, of Toronto, Ontario, under the direction of A. Koroleff.

[2]On the other side of a drivable stream, as in Figure 1.

are a number of steel rings on the wire. Depending upon their size, from 1 to 5 bolts are attached to the ring; the load quickly slides down over the wire by gravity; on impact with the tail tree it is automatically released and drops or rolls into the river that will carry it to the mill. When all the wood tributary to this wire installation has gone down, the wire is moved to the next spar.

The contrast between this easy way of bringing wood down steep slopes by gravity—by power available free of charge—and the usual, hard way of doing this work with horses is so great, so striking, that it seems absurd not to use "wire skidding" wherever the topography suits this method.

However simple wire skidding is, the preparatory work for its introduction has not been quite as simple as would appear. Many problems as to equipment and the procedure had first to be solved. This has been done chiefly through several experimentations and the writers feel that the method, as specifically described below, is now fit for successful commercial application, in spite of a few remaining "wrinkles."

Equipment

The equipment we recommend for wire skidding of pulpwood bolts consists mainly of gauge 6 steel wire; a small hand winch with a length of thin cable, for tightening of the wire (Fig. 4A); a steel grip, or "comealongs" (Figs. 4B and C), to form a convenient connection between the wire and the cable; and some steel rings with short lengths of light chain, for load attachment (Fig. 4D). The cost of the equipment, including some supplementary items, mentioned later, is only about $100 per set, at retail prices.[3] The weight and the bulk are small also (Fig. 5). On Fig. 6 the above equipment is shown installed, at the upper end of the span, ready for operation.

Wire

In the early stages of the experimentation, galvanized telephone wire was tried, without success, as it stretches and breaks much too

[3] A horse with harness and sleigh costs at least 4 or 5 times as much (not to speak of its feeding and stabling).

FIG. 1.—"Skidding by wire," by gravity, is a logical, easy way of bringing wood down steep, rough slopes. It works automatically.

FIG. 2.—Horse skidding (or hauling) wood down a steep slope is a hard, illogical way. Two strenuous trips are made for one load.

easily. After an inquiry into other kinds of wire, good satisfaction has been received with gauge 6 (0.192" diameter) S-type patent processed steel wire.[4] This steel has a carbon content of 0.64; its Brinell hardness is 0.99; and its breaking strength, 144,000 lbs. per sq. inch. The breaking strength of the gauge 6 wire is 4260 lbs. The weight is about 0.1 lbs., and the cost of the wire 0.54 of a cent, per foot. No breakage of this wire has yet been experienced in our trials.

Winch

The wire may be tensioned with a double block and tackle, or with a horse. However, the use of a hand winch, such as shown in Figure 4[5], can be strongly recommended. The two winches we have been using were made by Price Brothers and Company, Limited, at a cost of about $30 each. The weight is 30 lbs. The ratio between the driving and the drum gears is 1 : 4, and the handle of the winch is adjustable as to its length. The diameter of the drum originally was 3", and its capacity, 200 feet of ¼" cable. To attain more rapid take up, the diameter of the drum has been increased to 5", and it should be well correspondingly to reduce the gear ratio so as to maintain the same power of the winch as formerly. Ratchet action is a necessary feature; a strong steel pawl (Fig. 4a), when engaged with the lower gear of the winch prevents it from backward motion and slackening of the wire.

The winch can be fastened to a tree or stump very quickly yet firmly, as it has a concave (7" radius) base, to which are welded 2 short ¼" steel chains, one of them with a grab link at the end (not shown on Fig. 4A) and with a "bear trap" binder (Fig. 4d).

Cable

The steel wire is too stiff and springy to be conveniently wound directly upon the 5" drum. Steel cable, ¼", 6 x 19, having a breaking strength of 2.2 tons, 50 feet long, is used on the winch for holding and tightening of the wire (Fig. 4b).

Jaws ("Comealongs")

For each area to be operated, the length of the wire should correspond to the maximum dis-

[4]Obtained from the Steel Company of Canada, 525 Dominion Street, Montreal.

[5]See also the drawing of the winch, made to scale, on page 12 of "Skidding of Pulpwood over a Suspended Wire," by C. R. Silversides, PPRIC, 1946.

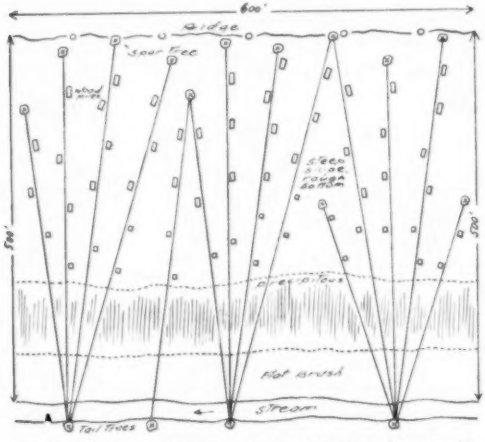

FIG. 3.—Diagram of a layout for "skidding by wire."

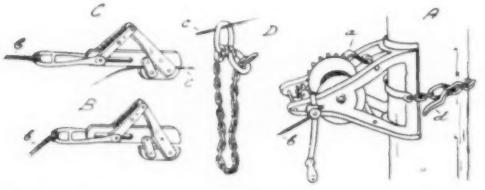

FIG. 4.—Equipment for "skidding by wire": A—hand winch. a—pawl. b—¼" cable. B-C—open and closed "Buffalo grip" for holding wire. D—chain sling for wood, with its steel ring on the wire.

FIG. 5.—Equipment for "skidding by wire" is simple, compact, light and cheap.

tance between the spar and the tail tree. When the spans are shorter, the extra length of the wire is left coiled (Fig. 6D). Jaws, or "come-alongs," such as are employed by telephone and high tension power linesmen, are used for connecting the wire with the cable, to raise the line from the ground and to give it required tension. These jaws (Figs. 4B-C, and 6C) do not bend or mar the wire. The type we have used is called "Buffalo grip."[6] Its size No. 2 is recommended (the cost is $6.50).

Load Attachment

Various means may be used for holding the load while it slides down the wire. Hardwood crotches (Fig. 7a) have occasionally been used elsewhere, since long ago, and were tried by us, but can hardly be recommended. Till this summer we experimented mainly with such attachments as are shown in Figs. 7b and c, with a snaphook riding on the wire, a swivel, and an iron "dog" driven into a bolt. These have not been very satisfactory, due to wear and breakage, the effort and loss of time in applying them, and the fact that only one bolt at a time could be taken.

A great increase in the possible output of "skidding by wire" has been recently attained through the following simplification and improvement of the means of load attachment Figs. 7d, e, f, g, h,). The load is fastened to a steel ring that rides on the wire, either with a light rope or, much better, with a chain sling. The strength of the rope or of deliberately provided "weak link" connection in the sling is such that it suffices until the load bumps with force into the tail tree. Then the load is automatically released due to instantaneous breaking, according to the case, of the rope or of the "weak link."

In the recent experiments on the St. Anne Power Company's operations, the wood averaged about 90 four-foot bolts per cord, and the top diameter of the bolts varied from 3″ to 16″, with occasional bolts still larger (up to 22″ top). Large bolts were attached to the rings singly; with small bolts the load consisted of 4, 5, or even 6 pieces; in most of the loads there were, however, 2 or 3 bolts. Estimated weight of a typical load, of slightly over 2 cu. feet of wood, was approximately 100 lbs.; and of the maximum load (a bolt containing 10½ cu. ft.), about 500 lbs.

With the attachment shown in Fig. 7d, 3/16″ sisal rope was used: It was passed through the ring, around the middle of the load, tightened, tied—in about 15 seconds. This method of attachment works well enough, but is impractical due to excessive waste of the rope.[7]

The recommended types of attachment are shown in Figs. 7e, f, g, h. A piece of ⅛″ steel chain of required length[8] is fastened to the

[6]It was obtained from Northern Electric Company, Limited, 1600 Notre Dame Street, West, Montreal.

[7]With the expense of nearly 70 cents per cord—much too high.

[8]In our case it was about 3½ ft., and the chain was purchased at approximately 6 cents per foot (Drummond McCall, Ltd., Montreal).

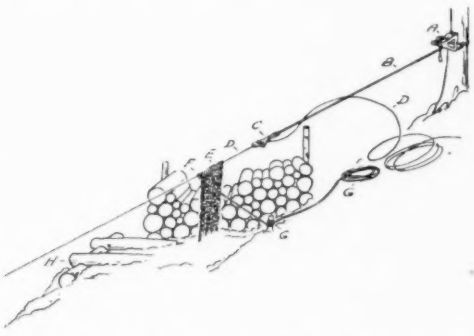

FIG. 6.—Upper end of stretched wire, ready for operation. A—winch, on spar tree. B—cable. C—grip, holding wire. D—wire. E—slings. F—snaphook, holding slings from running down. G—rope. H—loading platform.

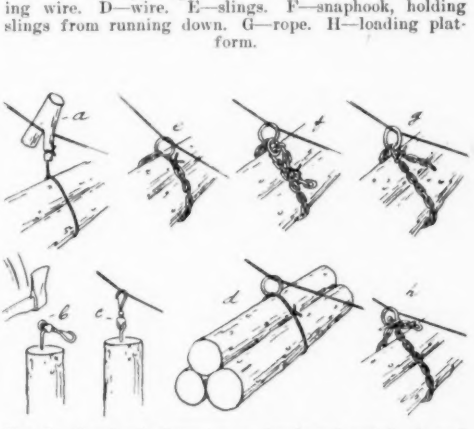

FIG. 7.—Load attachments: a—hardwood crotch. b and c—iron "dog" with a snaphook. d—steel ring and rope. e—chain sling with "weak link lock" of rope. f—sling fastened by haywire. g—sling fastened by wooden pin. h—similar to "g," but less practical.

steel ring that will carry the load. The chain is placed around the load and is secured by one of the following three methods that provide a "weak link lock" which should break on the impact of the load with the tail tree. (1) As in Fig. 7e, a short piece of rope of required strength is used to tie the chain to the ring. (2) The free end of the chain is passed through the ring riding the wire, or through another ring, attached to that mentioned (shown in Fig. 4D), and the chain is locked by passing a 6″ piece of hay wire (14 gauge black iron wire) through the two links, then bending and twisting it with the fingers (Fig. 7f). From 1½ to 2 turns of the wire, depending upon the load, sufficed for holding it while descending; and on its impact with the tail tree, the connecting wire either instantly untwisted or broke. (3) A short piece of a birch branch, about the thickness of a pencil, for a load of 2 cu. ft., was used as a pin, as shown in Figs. 7g, h, and 8, to pass through the link of the chain and to lock the sling. This pin breaks and the bolts spill on arrival at the tail tree.

These methods of weak link fastening of the load are very simple, even crude, but after only a very short practice, they work well and fast—the load was usually attached within 12 or 15 seconds. The cost of these "weak links," at a rough estimate, should not be over 15 cents per cord. The use of a wooden pin or of a piece of hay wire is more practical than the tying of rope loop, especially in cold weather. If "skidding by wire" receives—as, we think, it should—a sufficiently wide commercial application, the means of load attachment will be probably further improved through the use of specially manufactured slings with "weak link locks," operating on a principle of pin sheering.

To come back to the rings that are used on the wire, to carry the load—the rings we had in the last experiment (⅛″ x 2″) were of too soft steel and due to friction and heating in the descent, the wire cut into them too readily. Better service was received from ½″ thick oval rings, 2″ long, made from an old boom chain by cutting out every second link. This link could carry down at least a cord of wood before wearing out. Much longer service can be obtained from round rings made of considerably harder steel; yet this steel should not be as hard as that of the wire, not to wear the latter out rapidly.

A sample list of the equipment required per unit for skidding by wire is following (weight and costs shown are approximately):

Quantity	Item	Weight	Cost
		Lbs.	*Dollars*
1	Winch	30	50.00
600 ft.	6 gauge, 8 type wire..	59	3.25
1	"Comealongs"	2½	6.50
40 ft.	¼″ cable	3½	5.00
30	Chain slings	45	22.50
20 ft.	¼″ chain	25	5.50
1	Pliers	1	1.00
600 ft.	⅜″ rope	20	6.80
500 ft.	Gauge 14 wire	10	1.00
		196	$101.55

The rope and the chain mentioned above are intended, respectively, for returning the slings from the tail tree up and for preparation of a brake at that tree, when needed, as will be explained later in the report. Some of the above items will be used only under certain circumstances. Although the equipment is relatively light, it is well to use a specially made light pack board for carrying it, so that the men have their hands free.

Operation

Efficient use of the method we describe should be easy after some experience has been gained, but in the initial stages, with green men, careful pre-planning is necessary. This applies to the choice of area suitable as to its topography, to

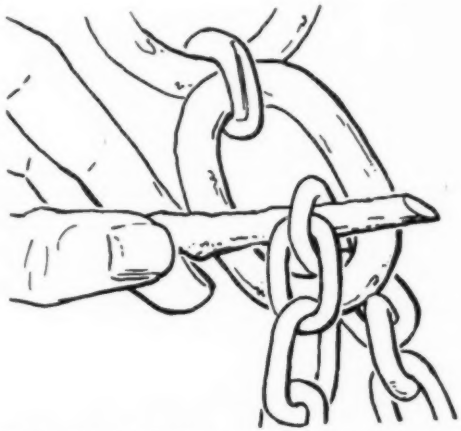

FIG. 8.—Detail of locking load in a sling with a wooden pin (½ of actual size).

selection of spar and tail trees, and to cutting and placing wood in such a manner that it could be sent down the wire from the points that are most convenient, without undue loss of time and effort. Proper co-ordination between the placement of wood and its skidding "by wire" is so important that it should be best to use, at least at the start, the same well chosen men for cutting and wire skidding, under the best available supervision.

Loading Platforms

The most convenient points for sending wood off are those immediately above steep drops in the slope of the hill and the cutters should endeavor to place the wood at such points. The loads may be sent off direct from the ground, but it is often more practical to make small loading platforms by placing a large pulpwood bolt on the ground at a right angle to the wire, then laying across it two other bolts with axe notches, to prevent them from rolling, as shown in Figs. 6H and 9. This usually takes not more than 5 minutes.

Position of Wire

For convenience of attachment, the wire should be over and close enough to the load. When adjustment is required, it can usually be made by operation of the winch. If the wire is too low at the loading point, it can be lifted too by a pole tripod back of the loading point. The wire may be raised or lowered, within a limit, or moved to the side, by the use of guys with snatch blocks, attached to nearby trees or stumps.

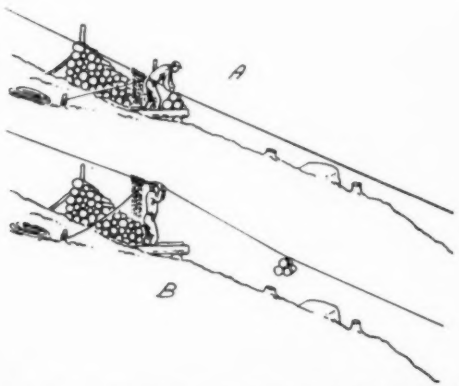

FIG. 9.—A—attaching load. B—sending it down high enough to clear obstacles immediately in front.

Sending Load Off

One bolt, if large, and several if small, are placed across the loading platform (Fig. 9A) and attached to the ring on the wire. If there are no obstacles ahead, to be cleared by the load, a slight raising of the wire by hand, back of the ring, will start the load down. When there are some obstacles as in Fig. 9B, the wire should be raised higher, merely for 2 or 3 seconds. The sling should be placed around the middle of the load, so that it travels in a horizontal position; and for sending the load off, the wire should be raised without undue jerking, not to start it and the load swaying, as then wood might occasionally spill on the way.

Crew

Unless the loads are too heavy, the work can be done effectively by one man, but where some of the wood is large, the use of two men is more practical. In the case of our last experiment, with typical loads consisting of two 6″ and one 5″ bolt and with occasional bolts of about 20″ top diameter, two men were used by far most of the time, even though an average load could be handled by one man only.

Load Descent

On distances between 300 and 500 feet, and with the wire inclined at 40-60 percent, the loads descended usually in from 8 to 10 seconds. However, some loads that were not started well and were swaying due to that or to too slack wire, travelled much slower, and the weak link of their attachment failed to break on the impact with the tail tree. That wood usually spilled when banged into by the next load.

Tail Trees

These of course, should be chosen with a view to desirable wood placement, right into the water, or in a pile. Even brief experience should show various means for deflecting wood in a desirable direction. Durability of tail trees under the impact can be increased by topping them and by guys, although we seldom had the need to resort to the latter means.

The wire should not be just tied to the tail tree, but attached as shown in Fig. 10E, by wrapping it say 5 times around the tree, looping the end around a spike and driving it in after bending it over the wire. With such attachment, the tension on the wire is absorbed over its considerable length, and the wire is not subjected to too heavy strain at any one point.

Brake

The use of a brake at the tail tree, although not always necessary, is recommended. A very practical type, designed by E. Pontbriand (at that time with Price Brothers & Company, Limited), is shown in Fig. 10. For typical conditions this brake may be made of two 18 ft. hardwood poles, of 5″ top diameter. They are tied together at the top by a chain that is attached to the tail tree. The skidding wire passes between the poles, which are inclined at approximately 45° angle. At the base, the poles are chained to the tail tree, with a little play.

When a rapidly descending load bangs into the brake, at a slant, its kinetic energy is mainly absorbed by lifting the brake into the position shown in Fig. 10C. The weak link of the load attachment breaks, the ring with the sling passes between the poles to the tail tree, but the bolts are deflected down. The brake not only causes the wood to drop off in front of the tree, instead of glancing off it and sometimes landing behind, but it protects the tail tree and the slings; it also eliminates wood breakage, which, without use of the brake, may or may not be consequential. In our recent experience with "skidding by wire" over 45 cords of wood, with the use of some tail trees without a brake, only about half a dozen very small bolts were broken.

Return of Slings

The slings, supported by their rings on the wire, are held, just back of the loading point, by a snap hook and a rope, as in Figs. 6E and 9, and one of the rings is freed at a time, as needed. We kept enough rings on the wire for about a cord of wood—about 35 or 40. After all of them went down, they were returned up the hill over the wire, as shown in Fig. 11. A rope was attached to the last load and when it reached the tail tree, the slings were tied to its end and pulled up by hand. For greater ease of pulling them up, they should be tied to the rope in groups, to minimize the tendency of the rings to jam on the wire. With the span of 500 ft. and the wire sloping at 50-60 percent, it took usually from 8 to 12 minutes to return the slings. It depends upon the set-up and upon the number of wire lines operated close together, whether it will pay or not to keep a man below the hill for attaching the rope, to return the slings, as this work alone would take only a small portion of his time.

Safety

With reasonable care exercised, this method should not be considered as unsafe, but appropriate precautions should certainly always be taken. Although no accidents have occurred in the course of our experimentations, a few near accidents were observed in some cases of definite lack of caution. Descending loads move very fast and after hitting the tail tree, some bolts may fly off a considerable distance, although this is not usually the case. Even if there are no men at the bottom, just in case they come, it is well to hang a red cloth near the discharge point, as a danger sign. Care should be taken not to walk under the suspended wire which is in use, as the occasional load may spill out while in transit. If the wire should break, the likely place would be quite close to the tail tree.[9] In case of such a break, the wire comes down rather quietly, but if the break should occur near the top, which is rather unlikely, or if the wire should suddenly be released

[9]Such a break can be repaired within only a few minutes, by letting out say 10 ft. of the wire from the "comealongs" on the hill, pulling the wire down and wrapping its lower end around the tail tree, then fastening the wire with a spike.

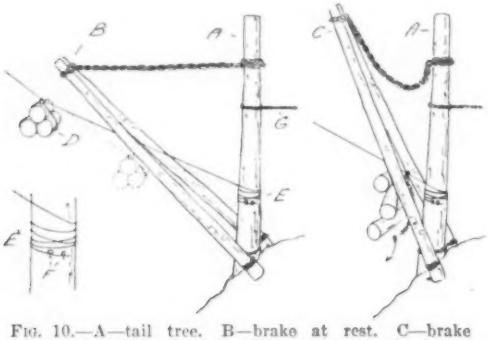

FIG. 10.—A—tail tree. B—brake at rest. C—brake when deflected by load D. E—attachment of wire to tail tree. F—wire loops and bent spikes. G—guy.

FIG. 11.—Returning slings uphill with rope over wire. Rope held up by rings, not to tangle.

by the "comealongs," or the winch cable breaks, the wire could sway and shoot down with some force. Care should be taken, therefore, that the "comealongs" holds the wire firmly and that the winch cable is stronger than the wire.

For both safety and efficiency of work, it is well to develop a simple system of signals for use by men when working at a distance from one another.

Production

The output of "skidding by wire" in the early stages of its introduction can be exemplified by our recent experimentation on the operations of St. Anne Power Company. As was mentioned, the timber ran about 12 cords per acre (mostly balsam) and the bolts were from 3" to 16" top diameter, with occasional bolts even larger, but with an average of about 90 pieces per cord. The average number of loads per cord was about 40, the loads averaging slightly over 2 cu. ft. With the distance between the spars about 70 ft. and the spans up to 500 ft., the average skidding distance was roughtly 400 ft. There were 4 or 5 piles of wood for each line, the upper piles mostly larger (1½ cords) than those below (½ cord). On the average, four or five cords were skidded by wire from each spar.

Timing

The time required per load was typically as follows:

Making load from nearby pile....	15 seconds
Attaching load to ring on wire...	15 seconds
Starting load by lifting wire....	3 seconds
	33 seconds
Ordinary delays	10 seconds
	43 seconds

Thus, about 32 minutes were required for sending down one cord of wood. The other necessary operations required the following time:

First installation of wire.....	45 minutes
Moving wire to next location and getting it ready (after skidding 4½ cords)	25 minutes
Preparation of loading platforms, when required (say once for every cord)	5 minutes
Returning slings up-hill (once for every cord)	10 minutes

Thus, the operating time per cord was, approximately:

Installation and moving of wire..	5 minutes
Making loading platforms	5 minutes
Making loads and sending them off	32 minutes
Returning slings	10 minutes
	52 minutes

Output

On this basis, without serious avoidable delays, the output is 1.15 cords per hour. Allowing for some such delays and for occasional extra work, such as preparation of the brake (about ½ hour), the production of about one cord per hour, or 8 cords per day, may be expected in the early stages of the use of this method under such conditions as mentioned. It should be reasonable to assume that later on, through the gain in experience and skill, this production could be bettered by from 25 to 50 percent, or even more, assuming a fair or high degree of efficiency. In fact, in our last experiment in sending wood down, a rate of 2 cords per hour, or even a slightly higher rate, was maintained in several cases for periods of half an hour or one hour.

Of course, the size of the loads and the tempo of work should be only such that the workers would not become unduly fatigued during their day's performance. There is no doubt, however, that this method of bringing wood down, after some experience is gained, should be much easier on the men than the methods used at present in getting wood down very steep and rough slopes; and it certainly would save horses from exceedingly hard, and hazardous, work under conditions to which they are not naturally adapted.

"Skidding by Wire" vs. Gravity Chutes

The chutes, built on a trestle, require bringing a rather large quantity of wood to the intake, to justify the expense of their construction. Even portable types of chutes call for greater concentration of cut wood than "wire skidding" does. The latter definitely surpasses any type of chutes as to the portability of the installation and the flexibility of its use. Thus "wire skidding" permits logging steep slopes with the least amount of moving wood from the stump to the points of assembly. This is an important feature, as assembling wood on steep slopes is a strenuous operation.

There should be many cases, however, when it would pay to skid, or even haul, with horses considerable quantities of wood from a plateau or a gentle slope to a place below which the slope is too steep and rough, to send this wood down into the valley over a single installation of the wire. In such instances of semi-permanent use of the wire, it will, of course, carry considerably

more wood per day than was suggested in the above estimates, dependent on frequent moving of the wire to its new locations.

Potentialities of Wood Transport over a Wire

The maximum practical range for "skidding by wire" undoubtedly should be much greater than 500 or 600 ft.—with appropriate equipment. In fact, in some of our earlier experimentation, spans up to 750 ft. were tried. The writers feel, however, that it is best first firmly to establish, and to spread, effective use of the described method and equipment within comparatively short distances and only then to endeavor to substantially increase the range.

Much of the same applies to transportation of logs. Surely, 12 or 16 ft. logs can be transported "by wire" (and were transported, elsewhere), but better let us first adapt this method for wood in bolts, to definitely make it pay.

When the technique of "skidding by wire" is further advanced through ample experience, it probably will be found that this method, with proper changes, under some conditions, can compete with the others not only on excessively steep, but even on mild slopes (through wood attachments with rollers upon the wire and other special adaptations).

The potentialities of wood transportation by gravity over a wire (or cable) are so tempting and challenging that a number of other approaches than that described suggest themselves readily (for instance, such as use of an endless clothes line principle). This would lead, however, to the risk of departing from desirable simplicity and of scattering the attention before the completion of the job in hand.

We hope that some of the operators will carry on from where this report leaves off, to apply the recommended method and make it pay. Waiting till the proverbial "George" exhausts various possibilities, completes all the needed experimenting and irons out all the wrinkles, would hardly be practical. The introduction of the described, highly desirable, principle has been too slow in coming to us as it is.

Historical References and Acknowledgments

Although the described method was referred to as new, this literally applies only to our recent progress in its technique. As far as eastern Canada is concerned, the possibilities of "Skidding by Wire" were first presented for the attention of the Woodlands Section, CPPA, in 1944, by A. Koroleff, in his paper under that title. Under his direction a study of this method was undertaken by the Pulp and Paper Research Institute of Canada, in cooperation with certain paper companies, and two progress reports, by C. R. Silversides, have been published.[10] The companies' cooperation and the opportunity for the writers to do field experimenting were provided only sporadically. Nevertheless, the equipment and the technique of "wire skidding" have gradually been improved, with the leads mainly provided by A. Koroleff, through the consistent efforts of C. R. Silversides and of those mentioned below.

The companies who contributed through the members of their Woods Departments to the experimentation with "wire skidding" in the earlier stages were: Price Brothers and Company Limited; Bathurst Power and Paper Company, Limited; Canadian International Paper Company; and Anglo-Canadian Paper Mills, Limited.

The most effective experiments conducted so far, were carried out in June and July on the operations of St. Anne Power Company and much credit for their success is due to the provisions made by C. R. Harris and to the highly efficient work of P. Clair. The writers are very grateful for the fine cooperation they received.

After the study was started, it was gradually learned that transportation of wood by gravity over a suspended wire or cable, on the principle proposed in this paper, was, or still is, used occasionally elsewhere, in widely scattered places, mostly with good success.

In "The History of the Transport of Wood by means of Cableways,"[11] Dr. Franz Hafner refers to highly successful use of a cable (rope?) in 1825 on steep slopes of Mount Vesuvius in Italy for bringing chestnut logs down for charcoal manufacture. The load was tied to a wooden crotch and sent down a cable, kept tight by a winch, over spans well in excess of ½ mile.

In Southern Tyrol, Johann Pradi in 1857 conducted a similar operation in sending down by gravity bundles of wood, one per minute,

[10] "Skidding of Pulpwood over a Suspended Wire," PPRIC, 1946; and "Gravity Skidding of Pulpwood over Suspended Wire or Cable," PPRIC, 1947.

[11] "Forstwissenschaft Centralblatt," Vol. 63, 1941.

over ½ mile long cable, sloping 36°, to a valley over ¼ mile below. This operation was so successful that its cost was only ¼ of the cost of their conventional methods of wood transport.

We gather that "wire skidding" was tried some time ago, with apparently satisfactory results, in B.C., with shingle bolts, using staples for their attachment to the wire; and that it is used to good effect, here and there, in Switzerland.

Is it not high time that we make use of these means to save effort, money, and wood and to promote soil conservation when logging in very rough country?

Statistics from Schools of Forestry for 1948: Degrees Granted and Enrollments

Cedric H. Guise

Professor or forestry, College of Agriculture, Cornell University, Ithaca, N. Y. During 1929-31 he was assistant director of the Forest Education Inquiry and co-author of Forest Education. Since 1933 he has assembled and published annually statistics from all forestry schools in the United States.

This article is another in a series of comparable papers appearing annually in the Journal of Forestry since 1934, reporting the enrollments at the schools of forestry and the numbers of degrees conferred. Statistics of this type were first assembled when the Forest Education Inquiry made its study in 1929-31, and were published in the Inquiry's report in 1932.[1] *The annual articles in the Journal have brought to date the figures for each successive year.*[2]

THE Society of American Foresters maintains a complete list of all schools in the United States offering curricula in forestry. They are classified in three groups: (1) 22 schools offering professional degrees and accredited by the Society of American Foresters; (2) 5 schools offering professional degrees but listed only, and (3) 8 schools offering curricula, but as yet on a nonlisted status. With one exception this classification and grouping of schools is used in the 1948 presentation of statistics.

In 1947, 29 schools were included. In this article 34 schools are listed. Schools appearing for the first time are those at the University of Massachusetts, Amherst, Mass., Stephen F. Austin State College, Nacagdoches, Texas, Louisiana Polytechnic Institute, Rushton, Louisiana, and the University of the South, Sewanee, Tennessee. The Department of the University of Connecticut, Storrs, Connecticut, discontinued last year, is again added.

Included in the Society's nonlisted group is the Department of Biology, Blacksburg, Virginia. The head of the department stressed the fact that the curriculum was not one of forestry but instead forestry-wildlife conservation, and that graduate study was in wildlife only. On the basis of these facts, this school is not included in the 1948 figure.[3]

Probably the most significant of all figures is that of total undergraduate enrollments. In 1948 the number for all schools is 8212, an increase of 758 over the 1947 total of 7454. If the total undergraduate enrollments of 365 of the five schools not reported in 1947 were deducted from the 8212, the enrollments would total 7847, which are 393 in excess of the 7454 reported from the same schools last year. The undergraduate enrollments at the schools have reached an all time peak.

The number of men registered for the Master's degree is 330, a decrease of 9 from 339 reported last year. There are 93 men now enrolled as candidates for the Doctorate, an increase of 13 over the 80 listed for 1947-48.

Undergraduate degrees to the number of 918 were conferred in 1948, as compared with 553 reported for the previous year. Master's degrees

[1] Graves, H. S. and C. H. Guise. Forest Education. Yale Univ. Press, New Haven 1932.

[2] Guise, C. H. (Fifteen articles on degrees granted and enrollments at schools of forestry in the United States, 1934-1948.) Jour. Forestry 32:337-43; 33:402-05; 34:114-20; 35:77-83; 36:12-18; 37:197-202; 38:241-46; 39:359-64; 40:196-202; 41:87-91; 42:357-60; 43:172-75; 44:110-14; 45:174-80; 46:168-73.

[3] Virginia Polytechnic reported 140 undergraduates; freshmen 65; sophomores 35; juniors 30; seniors 10. Of this number 35 were veterans; 105 nonveterans. Included was one woman. Also registered were 4 candidates for the Master's degree in wildlife management; 5 undergraduate degrees were conferred in wildlife-forestry and 4 Master's degrees in wildlife.

to the number of 222 were conferred, this being almost the exact number reported last year.

The comparative figures of current significance for 1947 and 1948 are shown in Table 1.

TABLE 1.—SIGNIFICANT STATISTICS FOR 1947 AND 1948

	1947	1948
Bachelor's degrees conferred	554	918
Master's degrees conferred	223	222
Doctor's degrees conferred	7	16
Undergraduates enrolled	7454	8212
Members of freshman class	2061	1851
Members of sophomore class	2878	2178
Members of junior class	1577	2497
Members of senior class	938	1686
Graduate students-Master's	339	330
Graduate students-Doctor's	80	93

TABLE 2.—NUMBER OF DEGREES GRANTED FOR COMPLETION OF STUDIES AT SCHOOLS OF FORESTRY IN THE UNITED STATES FOR THE CALENDAR YEAR 1948

Accredited schools	Undergraduate degrees	Master's degrees	Doctor's degrees
1. California	44	6	2
2. Colorado	29	14	—
3. Duke	—	26	5
4. Florida	22	5	—
5. Georgia	57	1	—
6. Idaho	25	2	—
7. Iowa	35	—	—
8. Louisiana	42	6	—
9. Maine	24	2	—
10. Michigan University	81	35	3
11. Michigan State	51	13	—
12. Minnesota	29	5	1
13. Montana	22	4	—
14. New York	108	27	2
15. N. Carolina	15	—	—
16. Oregon	68	1	—
17. Pennsylvania	53	13	—
18. Purdue	35	1	—
19. Utah	32	4	—
20. Washington Univ.	40	7	2
21. W. Virginia	11	—	—
22. Yale	—	47	1
Total	823	219	16
Listed schools			
1. Alabama	14	—	—
2. Harvard	—	2	—
3. Massachusetts	4	—	—
4. Michigan Mining	10	—	—
5. Missouri	—	—	—
Total	28	2	—
Nonlisted schools			
1. Connecticut	12	1	—
2. Louisiana Polytechnic	11	—	—
3. New Hampshire	21	—	—
4. Oklahoma	—	—	—
5. Tennessee	2	—	—
6. Texas	6	—	—
7. Washington State	15	—	—
Total	67	1	—
Grand totals	918	222	16

Degrees Granted

During the calendar year 1948, the number of degrees granted to men who completed their studies in forestry were as follows: Undergraduates 918, Master's 222, and Doctor's 16. As compared to those granted in 1947, Bachelor's 553, Master's 223, and Doctor's 7, there were increases of 365 Bachelor's degrees, and 9 Doctorates. There was one less Master's degree conferred.

Statistics dealing with the numbers of degrees

TABLE 3.—NUMBER OF DEGREES GRANTED FOR COMPLETION OF STUDIES AT SCHOOLS OF FORESTRY IN THE UNITED STATES FOR THE CALENDAR YEARS 1900-1948

Years	Undegraduate degrees	Master's degrees
1900	1	—
1901	5	—
1902	2	9
1903	3	14
1904	9	29
1905	9	34
1906	24	24
1907	19	27
1908	31	35
1909	47	44
1910	61	48
1911	100	61
1912	122	54
1913	136	37
1914	151	42
1915	124	35
1916	151	36
1917	160	27
1918	65	10
1919	53	6
1920	160	25
1921	126	26
1922	141	44
1923	217	31
1924	215	43
1925	280	44
1926	259	58
1927	263	50
1928	302	64
1929	291	54
1930	308	69
1931	394	97
1932	380	78
1933	355	65
1934	337	47
1935	423	58
1936	502	67
1937	803	75
1938	980	95
1939	1,102	112
1940	1,072	105
1941	834	117
1942	654	76
1943	446	28
1944	106	12
1945	51	18
1946	192	65
1947	553	223
1948	918	222
Total	13,937	2,640

conferred are summarized in Table 1, presented in detail by the individual schools in Table 2, and shown in total for all schools for each of the years 1900 to 1948 in Table 3.

In last year's article it was predicted that about 900 undergraduate degrees would be awarded in 1948, an estimate that was almost exact. For the year 1949 it is estimated that some 1500 men will be graduated with bachelor's degrees, since 1686 men are reported this year as being in the senior class. It is not unlikely that this high figure will be exceeded in both 1950 and 1951. Current figures indicate that the curve will not start to decline until 1952.

The number of Master's degrees for 1948 was also correctly estimated in last year's paper. For 1949 it appears that the number to be awarded will again approximate 225. Of the 222 Master's degrees reported 175 (78 percent) were conferred at 7 schools, namely, 47 at Yale University, 35 at the University of Michigan, 27 at the New York State College of Forestry, 26 at Duke University, 14 at Colorado State College, 13 at Michigan State College and 13 at Pennsylvania State College. Of the 22 accredited schools, there were only three, those at Iowa State College, North Carolina State College and the University of West Virginia, that did not report the awarding of Master's degrees.

The total undergraduate degrees granted since 1900 for studies completed in forestry from all schools in the United States is now reported to be 13937 (Table 3); Master's degrees conferred since 1902 total 2640. With the 16 doctorates reported in 1948, the total of these degrees for studies completed in forestry and its underlying sciences now becomes 172.

In February, 1948, 39 men completed their training at the New York Ranger School; in all 879 men have been awarded certificates for the completion of the Ranger School course.

Enrollments

Tables 4 to 10 deal with enrollments at the schools of forestry. Table 4 shows the enrollments by classes at each school for the fall term of 1948-49. Table 5 lists the totals of undergraduate enrollments at all schools for each of the years 1903-04 to 1948-49. Table 6 presents the undergraduate enrollments by classes at all schools for each of the years 1933-34 to 1948-49; it also shows the increases or decreases by years for each of the four undergraduate classes. Table 7 lists for all schools for each of the years 1931-32 to 1948-49 the total numbers of men registered as candidates for the Master's and Doctor's degrees. Table 8 gives the enrollments at each school for the fall term 1948-49, classifying undergraduates and graduates into veteran and nonveteran groups. It also shows the total enrollments classified by men and women. Tables 9 and 10 present further information dealing with veteran and nonveteran enrollments.

In the tables dealing with enrollments, special students are excluded. In all only 43 special students were reported from 10 schools this year. Of these 43 students, 23 were reported from the Michigan College of Mining and Technology.

A distinct error was made last year in predicting the trends of undergraduate enrollments for the immediate future. It was thought that the 1947 figure of 7454 would not be exceeded, this estimate being based on the great decrease in freshmen, the number in 1947-48 being 1550 fewer than in 1946-47. However this decreasing trend did not continue and this year's figure is only 210 less than that of last year. It now appears that the currently high enrollments will continue for several years more. Next year's undergraduate enrollments should be approximately the same as those for the current year. A study of the figures in Table 6 now indicates that for some years to come, even after the large number now in the sophomore and junior classes are graduated, that the total numbers of undergraduates will be between 6000 and 7000.

The New York Ranger School reports 56 men registered for the year 1948-49.

Enrollments by Classes

The senior classes in all schools total 1686, an increase of 748 over the 938 total of 1947-48. This is the largest number ever enrolled as seniors, exceeding by 474 the former peak of 1212 in 1938-39. The indications are that larger numbers will be graduated in both 1950 and 1951. In the junior class the total of 2497 exceeds the figure of last year by 920. This figure of 2497 is an all-time peak for the junior class. It exceeds by 1095 the highest number previously reported, this being 1402 in 1936-37. There will probably be fewer men classified as juniors next year though this is uncertain. The men who transfer to schools of forestry after completing two years at junior colleges make it difficult to give a close estimate.

The 2178 men reported in the sophomore class show a decrease of 700 from the 2878 listed for

TABLE 4.—ENROLLMENTS BY CLASSES AT SCHOOLS OF FORESTRY IN THE UNITED STATES FOR THE FALL TERM 1948-49

Accredited Schools	Freshmen	Sophomores	Juniors	Seniors	Total undergraduates	Graduates	
						Master's	Doctor's
1. California	26	52	108	74	260	15	7
2. Colorado	—	42	110	98	250	5	—
3. Duke	—	—	—	—	—	47	12
4. Florida	120	117	65	55	357	2	—
5. Georgia	43	73	94	94	304	4	—
6. Idaho	62	46	65	41	214	12	—
7. Iowa	92	138	81	64	375	2	1
8. Louisiana	31	42	104	54	231	6	—
9. Maine	72	80	73	61	286	7	—
10. Michigan University	34	34	101	100	269	35	21
11. Michigan State	121	134	202	151	608	21	8
12. Minnesota	78	126	113	77	394	13	5
13. Montana	76	123	123	58	380	3	—
14. New York	213	220	210	167	810	44	21
15. N. Carolina	55	65	81	53	254	3	—
16. Oregon	116	134	103	78	431	10	—
17. Pennsylvania	120	101	116	74	411	8	—
18. Purdue	66	69	81	58	274	5	—
19. Utah	92	116	115	58	381	11	—
20. Washington Univ.	100	80	116	82	378	13	—
21. W. Virginia	59	52	76	31	218	—	—
22. Yale	—	—	—	—	—	57	18
Total	1576	1844	2137	1528	7085	323	93
Listed schools							
1. Alabama	45	71	78	38	232	—	—
2. Harvard	—	—	—	—	—	5	—
3. Massachusetts	15	20	40	13	88	—	—
4. Michigan Mining	48	36	31	26	141	—	—
5. Missouri	42	39	30	17	128	—	—
Total	150	166	179	94	589	5	—
Nonlisted schools							
1. Connecticut	4	11	31	11	57	2	—
2. Louisiana Polytechnic	36	34	41	12	123	—	—
3. New Hampshire	26	17	19	15	77	—	—
4. Oklahoma	23	37	37	—	97	—	—
5. Tennessee	6	6	7	3	22	—	—
6. Texas	30	25	12	8	75	—	—
7. Washington State	—	38	34	15	87	—	—
Total	125	168	181	64	538	2	—
Grand total	1851	2178	2497	1686	8212	330	93

TABLE 5.—UNDERGRADUATE ENROLLMENTS AT SCHOOLS OF FORESTRY IN THE UNITED STATES, 1903-04 TO 1948-49

Year	Enrollments	Year	Enrollments
1903-04	19	1926-27	1,880
1904-05	39	1927-28	1,957
1905-06	51	1928-29	2,079
1906-07	98	1929-30	2,123
1907-08	143	1930-31	2,120
1908-09	258	1931-32	2,573
1909-10	357	1932-33	2,388
1910-11	518	1933-34	2,246
1911-12	591	1934-35	3,791
1912-13	637	1935-36	5,406
1913-14	868	1936-37	6,032
1914-15	904	1937-38	6,067
1915-16	944	1938-39	5,144
1916-17	897	1939-40	4,487
1917-18	560	1940-41	3,763
1918-19	498	1941-42	2,881
1919-20	927	1942-43	2,326
1920-21	1,092	1943-44	503
1921-22	1,363	1944-45	571
1922-23	1,347	1945-46	1,473
1923-24	1,439	1946-47	7,010
1924-25	1,624	1947-48	7,454
1925-26	1,771	1948-49	8,212

TABLE 7.—FALL TERM ENROLLMENTS OF GRADUATE STUDENTS IN SCHOOLS OF FORESTRY IN THE UNITED STATES FOR THE YEARS 1931-32 TO 1948-49

	Master's	Doctor's	Total
1931-32	173	26	199
1932-33	174	32	206
1933-34	80	37	117
1934-35	104	18	122
1935-36	114	25	139
1936-37	151	28	179
1937-38	150	34	184
1938-39	253	40	293
1939-40	213	34	247
1940-41	212	39	251
1941-42	137	45	182
1942-43	30	24	50
1943-44	30	7	37
1944-45	20	10	30
1945-46	108	16	124
1946-47	376	49	425
1947-48	339	80	419
1948-49	330	93	423

TABLE 6.—UNDERGRADUATE FALL-TERM ENROLLMENTS BY CLASSES IN SCHOOLS OF FORESTRY IN THE UNITED STATES FOR THE YEARS 1933-34 TO 1948-49

Academic years	—Freshmen—		—Sophomores—		—Juniors—		—Seniors—		—Totals—	
	Enrollment	Change	Enrollment	Change	Enrollment	Change	Enrollment	Change	Enrollment	Change
1929-33 averages...	773	..	597	..	476	..	398	..	2,244	..
1933-34	783	..	628	..	467	..	368	..	2,246	..
1934-35	1,751	+ 968	930	+ 302	671	+204	439	+ 71	3,791	+1,545
1935-36	2,301	+ 550	1,587	+ 657	943	+272	575	+136	5,406	+1,615
1936-37	2,044	— 257	1,771	+ 184	1,402	+459	815	+240	6,032	+ 626
1937-38	1,919	— 125	1,656	— 115	1,378	— 24	1,114	+299	6,067	+ 35
1938-39	1,403	— 516	1,235	— 421	1,294	— 84	1,212	+ 98	5,144	— 923
1939-40	1,259	— 144	1,095	— 140	922	—302	1,141	— 71	4,487	— 657
1940-41	1,000	— 259	975	— 120	857	—135	931	—210	3,763	— 724
1941-42	771	— 229	672	— 303	709	—148	729	—202	2,881	— 882
1942-43	845	+ 74	580	— 92	404	—305	497	—232	2,326	— 555
1943-44	199	— 646	94	— 486	101	—303	109	—388	503	—1,823
1944-45	321	+ 122	114	+ 20	64	— 37	72	— 37	571	+ 68
1945-46	840	+ 519	315	+ 201	205	+141	113	+ 41	1,473	+ 902
1946-47	3,611	+2,771	1,840	+1,525	914	+709	645	+532	7,010	+5,537
1947-48	2,061	—1,550	2,878	+1,038	1,577	+663	938	+293	7,454	+ 444
1948-49	1,851	— 210	2,178	— 700	2,497	+920	1,686	+748	8,212	+ 758

the preceding year. However the total is 117 greater than the 2061 reported as freshmen last year. This increase results in large part no doubt from the fact that Colorado listed no men as freshmen last year, and several others, for example California, Louisiana, and the University of Michigan list as freshmen only a part of the men who later are included in the registration of the upper classes. Although this year's figure is smaller than that of last year, it is higher than any figure of sophomore enrollments ever reported through 1946-47.

The freshman class aggregates 1851, a decrease of 210 from the 2061 of the preceding year. The highest enrollment of freshmen ever reported was 3611 in 1946-47. Last year a decline of 1550 occurred, but the current enrollment is not greatly less than that of 1947-48. It will be of interest to see the trends in freshman enrollments in each of the next several years. These figures will indicate to the schools the numbers of men for which they must provide instruction in years to come.

A small number of women are enrolled, 11 in all. Two are candidates for the Master's degree, one at Michigan State, and one at the New York State College of Forestry. There are four seniors, one each at Colorado, Michigan

TABLE 8.—ENROLLMENTS OF VETERANS AND NONVETERANS OF SCHOOLS OF FORESTRY IN THE UNITED STATES FOR FALL TERM 1948-49

SPECIAL STUDENTS EXCLUDED

Accredited schools	Undergraduates		Graduates		Total	
	Veterans	Nonveterans	Veterans	Nonveterans	Men	Women
1. California	195	65	19	3	282	—
2. Colorado	208	42	5	—	253	2
3. Duke	—	—	55	4	59	—
4. Florida	219	138	2	—	358	1
5. Georgia	244	60	4	—	308	—
6. Idaho	134	80	4	8	226	—
7. Iowa	375	—	3	—	378	—
8. Louisiana	177	54	6	—	237	—
9. Maine	286	—	7	—	293	—
10. Michigan Univ.	195	74	41	15	323	2
11. Michigan State	456	152	21	8	635	2
12. Minnesota	307	87	12	6	412	—
13. Montana	307	73	2	1	381	2
14. New York	510	300	45	20	874	1
15. N. Carolina	200	54	3	—	257	—
16. Oregon	314	117	7	3	441	—
17. Pennsylvania	298	113	8	—	419	—
18. Purdue	173	101	5	—	278	1
19. Utah	275	106	9	2	392	—
20. Washington Univ.	323	55	4	9	391	—
21. W. Virginia	158	60	—	—	218	—
22. Yale	—	—	58	17	75	—
Total	5354	1731	320	96	7490	11
Listed schools						
1. Alabama	188	44	—	—	232	—
2. Harvard	—	—	3	2	5	—
3. Massachusetts	71	17	—	—	88	—
4. Michigan Mining	95	46	—	—	141	—
5. Missouri	96	32	—	—	128	—
Total	450	139	3	2	594	—
Nonlisted schools						
1. Connecticut	57	—	2	—	59	—
2. Louisiana Polytechnic	82	41	—	—	123	—
3. New Hampshire	70	7	—	—	77	—
4. Oklahoma	74	23	—	—	97	—
5. Tennessee	11	11	—	—	22	—
6. Texas	42	33	—	—	75	—
7. Washington State	59	28	—	—	87	—
Total	395	143	2	—	540	—
Grand totals	6199	2013	325	98	8624	11

State, the University of Michigan, and Montana. One is a junior at the University of Michigan. There are 3 sophomores, one each at California, Florida and Purdue, and 1 freshman at Montana.

Graduate Enrollments

Candidates for the Master's degree total 330, only 9 fewer than the 339 reported last year. The highest figure was 376, in 1946. Prior to 1946, the highest enrollment was 253 in 1938-39. It would appear that for a few years at least the number of men registering as candidates for the Master's degree will not decline from the numbers reported for the past two years. The number of men to finish their undergraduate courses will be larger and it would seem that a reasonable increase could be expected in both 1949 and 1950.

Of the 22 schools in the accredited list, only one, that at West Virginia, did not report any men registered for the Master's degree. Yale leads with 57, Duke is second with 47, the New York State College of Forestry is third with 44 and the University of Michigan fourth with 35. Other institutions with the larger enrollments of Master's candidates are Michigan State 21, California 15, Minnesota 13, and the University of Washington 13. At these 8 schools are 245 candidates, 74 percent of the total of 330 reported.

Enrolled for the Doctorate are 93 men at 8 institutions. The University of Michigan and the New York State College of Forestry each report 21 candidates; Yale reports 18, Duke 12, Michigan State 8, California 7, Minnesota 5, and Iowa 1.

Enrollment of Veterans

In 1948, 8635 men and women were engaged in studying forestry. Of this total 8212, 95 percent, were undergraduates; 423, 5 percent, were graduate students. Of this total number 8624 were men, 11 were women.

Of the 8212 undergraduates, 6199, 75 percent, were veterans; of the 423 graduate students, 325, 77 percent, were veterans.

The summaries presented in Tables 8, 9 and 10, which deal with veteran and nonveteran enrollments, are not exactly correct, since Connecticut, Iowa and Maine failed to differentiate between the two groups, and all figures supplied were placed in the columns for veterans. If a breakdown of the statistics supplied from these schools had been possible, the percentages for veterans in each group would be slightly lower than those tabulated.

The percentage of veterans in the undergradu-

TABLE 9.—VETERAN AND NONVETERAN ENROLLMENTS CLASSIFIED BY UNDERGRADUATE AND GRADUATE GROUPS FOR YEARS 1946-47 TO 1948-49

	1946-47		1947-48		1948-49	
	Number	Percent	Number	Percent	Number	Percent
Undegraduates	7010		7454		8212	
Veterans	6201	88	5974	80	6199	75
Nonveterans	809	12	1480	20	2013	25
Graduate students	425		419		423	
Veterans	354	83	345	82	325	77
Nonveterans	71	17	74	18	98	23

TABLE 10.—THE NUMBERS OF VETERAN AND NONVETERAN GROUPS IN UNDERGRADUATE AND GRADUATE GROUPS 1948-49

Class	Veterans	Percent	Nonveterans			Total
			Men	Women	Percent	
Freshmen	957	52	893	1	48	1851
Sophomores	1526	70	649	3	30	2178
Juniors	2179	87	317	1	13	2497
Seniors	1537	91	145	4	9	1686
	6199	75	2004	9	25	8212
Masters	255	80	73	2	20	330
Doctors	70	75	23	—	25	93
Total	6524	76	2100	11	24	8635

ate classes was at its peak in 1946-47; during that year 88 percent were veterans. Last year the comparable figure was 80, and this year 75. Undoubtedly this trend will continue and in a few years nonveterans will make up the maximum part of the undergraduate student body.

The percentage of veterans enrolled for graduate studies was almost the same for both 1946-47 and 1947-48, 83 and 82 percent respectively. This year the figure dropped to 77 percent.

The proportion of veterans enrolled in the four undergraduate classes and as candidates for graduate degrees continues to be of interest. The numbers of both veterans and nonveterans classified in the various categories are presented in Table 10.

In the freshman class 52 percent are veterans; the comparable figure in 1947 was 60 percent. Of the sophomore 70 percent are veterans, as compared with 85 percent last year. Junior and senior classes are still predominately made up of veterans; 87 percent of the juniors and 91 percent of the seniors are in this group. Last year 88 percent of the juniors and 91 percent of the seniors were veterans.

In the group registered for Master's degrees, the percentage of veterans shows a slight decline. Last year 83 percent of those registered as candidates for the Master's degree were veterans; this year the figure is 80 percent. Of those registered for the doctorate in 1947, 71 percent were veterans; in 1948 the percentage of men in this class has increased to 75.

As the present classes move up, the percentage of veterans will naturally decrease. However the overall percentage of veterans will not decline to any great extent for several years.

The question arose with the author of this article as to whether or not the nonlisted schools should be included in this presentation. If he is in error in including the six nonlisted schools or in dropping out the Department of Biology at Virginia Polytechnic Institute, he will appreciate definite recommendations, presumably from the Division of Education.

A point worth comment is the manner in which the schools respond to the requests for these annual statistics. The forms are purposely simple, and call for a minimum of information. Within ten days after they are mailed from Ithaca the greater number are returned. Yet every year a few schools, often including some of those of highest standing, fail to give attention to the requests. Follow-ups are often required. Others fail to give the information in the way in which it is wanted.

From conversation and correspondence the impression is gained that the majority of forest school men and many others feel that these annual presentations are of interest and value. If such is the case it seems that all forestry schools could make the effort each fall to provide a prompt, accurate and complete reply to the requests sent out.

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AUTHORIZED in 1944 and first seeing light of day in May 1946, *Forestry News* ran for thirty-three consecutive issues until being combined this month with the JOURNAL OF FORESTRY. It appears as a separate department in the JOURNAL, and will continue to carry news as timely as a four-week copy deadline will permit.

Before voting to put the *News* back in the JOURNAL where a similar function had been previously served in divers ways, the Council sought the opinions of Section delegates at the pre-Annual Meeting in Boston last December. In the interests of economy to the tune of $4,000 annually some said do away with *Forestry News*. Others said *Forestry News* was more widely read than any other S.A.F. publication. Someone suggested that the JOURNAL would be unwraped more often if *Forestry News* was a part of the technical magazine.

By combining *Forestry News* with the JOURNAL a net saving of about $2,000 annually is anticipated.

The greatest criticism of the *News* was that the same items usually appeared elsewhere before they are published in the S.A.F. publication. A remedy for that fault was proposed by greater cooperation of members in submitting exclusive stories for *Forestry News*.

Robert D. Hostetter, who compiles the *News* department of the JOURNAL, thinks that cooperation of members is already very good, but short only of a scientific poll of the members is open to any suggestion for making the *News* better.

Local Autonomy Versus Forest Fire Damage in New England[1]

H. H. Chapman

Professor emeritus, Yale School of Forestry, New Haven, Conn.

THE WRITER possesses an heirloom in the form of a fire bucket inscribed with the name of his great grandfather, Ebenezer Lord, of Concord, N. H., and dated 1811. Captain Lord, of the New Hampshire State Militia, was a member of a mutual fire protection company composed of 35 householders. If the property of one of the members caught on fire the company ran to the fire, with these buckets holding about two gallons of water, and tried to put it out. If the fire was in someone else's house, the inference was that it was no concern of theirs. But, unless all fires were controlled, they might be the losers in spite of their lack of concern for property other than their own.

The next step therefore was when the entire community created a fire department, publicly supported. This system has developed satisfactory efficiency in dealing with the compact centers of population in towns or cities. But this local, town unit has not proved itself capable of coping with the problem of forest fires in woodland areas. Like all inefficient organizations, town forest fire services are able to deal with ordinary, moderate risks but fail when emergencies arise. Yet it is just these extraordinary dangers that must be controlled, or the entire efforts of the fire service prove futile.

By their very nature, forest fires require centralized and complete state coverage in order to prevent conflagrations, such as occurred in 1825 when half of the forests of Maine were destroyed, and which was repeated on a more local scale but with far greater financial loss, in 1947, with damage of $30,000,000 and irreplacable scientific material as at Bar Harbor.

Centralized control and authority do not mean the substitution of a force of salaried state employees for the system of town fire wardens and emergency crews of fire fighters. The local organization is an indispensable, and the most important, part of the overall setup. What it does require is that the authority of the skeleton state organization shall be supreme and capable of being instantly exercised whenever it is needed for fire control, anywhere, any time.

Fighting fires in time of unusual drought, by the uncoordinated efforts of town fire wardens, is like conducting a military operation, when the captain of each company can use his own authority to determine the action of his unit, and his superior officers must abide by his decision. Even if each town warden were thoroughly trained in forest fire fighting technique this system would fail, and when this is not the case destruction on a wide scale is inevitable.

In practice the system of autonomous town fire wardens, town appointed, often results in:

1. Appointment of inefficient men, not interested in forest fire protection and not trained in the methods of controlling large or dangerous fires, or extinguishing completely the fires which they attempt to control.
2. Frequent change in the personnel of the town fire warden force, thus losing the benefit of such experience and training as may be acquired.
3. Refusal of town fire fighters to cross a town line and incur expense in another town to prevent the spread of fire to their own town.
4. Resulting incompetence when faced with emergencies, which takes the form of incapacity to organize, control, or use effectively large masses of untrained men hastily summoned when too late, and incapable even of using equipment properly when it is supplied to them; permitting small fires, which should be constantly watched and extinguished to the last spark, to blow up and get away, days after their origin; and in general, utilizing the tactics of an improvised militia to repel the enemy instead of disciplined, effective, and fully organized and equipped forces.

Yet this obsolete and discredited system of autonomous local town wardens has been perpetuated in two of the six New England states since the first laws creating town fire wardens were passed over forty years ago. How does it happen that Maine and Massachusetts still continue this archaic system, so closely resembling the mutual bucket brigade of 1811, long after New Hampshire, Vermont, and Connecticut adopted a more modern effective fire fighting

[1]Presented before the 28th annual meeting of the New England Section S.A.F. Boston February 19, 1948.

organization? Are the local residents of the towns in Maine and Massachusetts any more independent or jealous of their local authority than in these other three states? Anyone acquainted with native Vermonters or Connecticut Yankees must reject this explanation. No New England state refused to join the federation which became the United States of America, nor did they lose any essential state right in this move. In the three states which chose to subordinate the town authorities, for forest fire protection, to that of the state organization, these towns were able for the most part to escape the holocausts which destroyed the property of the small "independent" localities in Maine. Will the sponsors of these obsolete methods require a second conflagration year before a brick house falls on them? What is the cost of education, by the method of experience?

Table 1 gives the record, as far as it has been furnished by the state officials concerned, covering the month of October, within which the four conflagration days, October 21 to 25 inclusive, occurred.

In analyzing these data fairly, we must consider the possible differences in fire danger between the six states. As to the drought itself, it was uniformly severe. Hence we must look to the only two other general differences which might account for these contrasting figures.

The first of these is the actual physical danger consisting of more inflammable types of timber, and the existence of bogs and peat beds in which fire is difficult to extinguish completely. Under such circumstances the hurricane of October 24 would blow up smouldering embers and the resulting blast would temporarily defy all efforts at control. These extra hazardous conditions applied in Maine, also in New Hampshire and Vermont. The lower average damage in the remaining three states is correlated in part with the prevalence of hardwoods and less peat and bog.

Due to these conditions, a few fires escaped control in New Hampshire. Buildings were burned, and heavy loss was suffered. But by contrast, and under comparable conditions, Maine's loss was 34 times as great, acre for acre of forest land, if we except the Maine Forestry District and compare only the organized towns.

Efficiency of Fire Control

There remains only the final cause, the difference in efficiency of fire control between these two states. This difference consists of the greater degree of centralized state control in New Hampshire over that in the organized Maine towns. In New Hampshire the state forester directly appoints all town fire wardens, on recommendation of the town officials, as deputy state fire wardens to serve under the state district fire warden's supreme authority. This is not a perfect system as the appointment is for one year only, and requires town sponsorship. But it is vastly superior to the system of autonomous town fire wardens which exists in Maine. It is not unreasonable to conclude that the ratio of 34 to 1 in damage per acre of woodland between these two states is the direct consequence of Maine's failure to depart from the "fire bucket" principle of town organization.

Vermont, which escaped with but one fire of over 1,000 acres, succeeded in controlling all other of her 125 fires when they were small. They were kept small and put out by the cooperation between the state fire organization and the towns, but chiefly from the fact that a 24-hour patrol was maintained until the drought was broken.

In Vermont also, the state forester appoints all town fire wardens who, in this case, hold office until they resign or are removed for cause by

TABLE 1.—COMPARISON IN SIX NEW ENGLAND STATES OF FOREST FIRE DAMAGE DURING OCTOBER 1947

State	Wooded-area	Fires	Area burned		Area per fire	Damage	Damage per area of total woodland
	Acres	*Number*	*Acres*	*Percent*	*Acres*	*Dollars*	*Dollars*
Maine forestry district	10,000,000	125	20,000	0.20	160	200,000	.02
Organized towns	**6,683,000**	**350**	200,000	3.00	175	32,000,000	4.79
New Hampshire	4,740,476	232	16,000	0.34	68	700,000	.14
Massachusetts	2,536,000	328	20,000	0.79	61	300,000	.12
Vermont	3,375,000	125	1,291	0.04	10	8,336	.0025
Connecticut	1,586,000	150	1,500	0.10	10	7,500	.005
Rhode Island	280,000	75	600	0.22	8	2,500	.01

the state forester. The state fire wardens have all the authority of the fire wardens in the towns, whereas in Maine they must serve under the town authority. The State Forest Commission, in Maine, has direct responsibility only over the Maine Forestry District, which includes the unorganized area and such towns as vote to join the district.

While the contrast between Maine, New Hampshire, and Vermont points to the town organization rather than the physical hazard as responsible for the damage, this fact is even more strongly emphasized by the contrast between the Maine Forestry District and the towns not incorporated in this system. The percentage of area burned here was on a ratio of 1 to 15 in the organized towns. The loss per acre was one to 240. The fact that the fire losses in the towns consisted largely of buildings merely emphasizes the need for and failure of adequate organization.

That efficient organization is possible in Maine was demonstrated by the record of some 1200 University of Maine students supervised by faculty men who had had adequate training in fire fighting in the West and South, under whose handling the Blacks-Woods Cherryville fire was stopped on October 24th.

By contrast, it is established that the Bar Harbor fire had been burning for several days, under the jurisdiction of a town fire warden, whose crews had failed to mop it up, before it broke out of control on October 21, and on October 24 surrounded Bar Harbor. On October 22 the university offered the aid of its organized student force to the superintendent of the Acadia National Park, who referred this matter to the Bar Harbor fire chief, on the ground that the fire was not on national park land, hence the Park Service had no responsibility. This action, exactly comparable with that of a local town, cost the Park Service $269,000 in park property and materials, i.e., $8000 in fire fighting costs, $95,000 for reconstruction, and $94,000 to clean up the hazard without counting damage to park value in trees destroyed on an area of 10,240 acres. The fire had to cross a wide belt of park land to reach Bar Harbor.

The Bar Harbor fire chief did not take the trouble to reply to this offer until the damage was done. Then a hurry call was sent on October 24, and the trained crews went into action. The effectiveness of their work is best measured by the resolutions passed by the town officials and sent to President Hauck of the university:

Dr. Arthur A. Hauck,
The President of the University of Maine,
Orono, Maine
Dear Sir:

1. As representatives of all the towns on Mt. Desert Island-Bar Harbor, Mt. Desert (including Northeast Harbor and Seal Harbor), Southwest Harbor, and Tremont, may we express to you our gratitude for the assistance rendered us by the men of the University of Maine in the disastrous fire which lately swept a considerable part of this island?

2. For a major part of the man-power which finally stopped the flames and saved all the western and southern part of the island, including Southwest Harbor, Seal Harbor, and Northeast Harbor, we are indebted to your students. Some 1200 men from the University in relays fought the fire on this island. Aside from their numbers, they proved amazingly effective in achieving success, as their organization, discipline, and leadership made them successful out of all proportion to their numbers. Those of us who saw them in action in the forests and on the mountains are proud of them, and are glad to state that to them in a high degree we owe our undestroyed and undamaged towns in the western and southern parts of our island, and the untouched beauty of some two-thirds of the forests surrounding us.

3. May we ask of you that a copy of this letter be furnished each of your students who volunteered to help us in the hour of our desperate need, as a slight token of our deep appreciation?

SETH E. LIBBY,
Chairman, Selectmen, Bar Harbor.
H. A. THOMAS,
Town Manager, Town of Mt. Desert.
STANWOOD H. KING,
First Selectman, Southwest Harbor.
J. E. WOOSTER,
First Selectman, Tremont.

It is not generally known, also, that the U. S. Forest Service sent in ten experienced fire personnel by air from points as far away as Colorado and Georgia, who were of great aid in organizing the fight which prevented further spread of the flames. These men did not seek, and did not receive, any public acknowledgment of their services. The National Park Service also sent 25 key men, too late to protect their own property.

Practically the entire loss suffered at Bar Harbor is directly chargeable to the obsolete and inefficient system of independent town officials. All evidence goes to establish this fact. How much of the destruction occurring along the western beaches south of Portland is attributable to the same basic source could well be ascertained by factual investigation.

In the region of presumably lower hazard due to preponderant hardwoods — Massachusetts, Connecticut, and Rhode Island—the comparison

must legitimately be made within this area, and not with the more northern tier of states. On this basis, the damage per acre of woodland in Massachusetts was 24 times that in Connecticut and 12 times the Rhode Island average. Massachusetts figures are approximations only, since no authentic surveys or areas burned or damage done have yet been completed. Is there any correlation here between organization and damage?

The System in Massachusetts

In Massachusetts the towns appoint the fire warden annually, subject to the approval of the state forester. Selectmen and tree wardens may fill this office or the fire chief of a town. On failure of the town to appoint a warden, the state forester can do so after a specified time. The state fire wardens do not have any authority in the town. This fact and the difference in tenure, plus the possible deleterious effect of constant political changes in the state commissionership, may account for the markedly lower efficiency of fire protection in Massachusetts contrasted with Vermont. The main difference between trained supervision and amateur efforts lies in the continuous patrol and complete suppression of fires through 24-hour service, as contrasted with an "8-hour day" and resultant repeated outbreaks of fires assumed to be under control.

In Massachusetts, of the 83 fires which went out of control on October 24, 63 had been burning for several days before the outbreak. The Bar Harbor, Maine, fire was of this character and received the usual daylight treatment! Had it not been for the 24-hour efforts put forth, New Hampshire's losses might have equalled those of Maine.

The fact that efficiency was lower under the autonomous town system in Massachusetts than in adjoining Connecticut is best brought out by the fire in the town of Sturbridge, Mass., adjoining the Connecticut boundary. Aside from costing this town over $30,000 in fire bills, the town fire marshal failed either to organize or discipline the crews summoned to fight this fire. As it threatened to cross the line, where drought conditions were exactly similar, the district warden of Connecticut at the request of the selectmen of Sturbridge proceeded to fight the fire in Massachusetts with a small crew, using a power pump and a mile of hose, and in a 20-hour fight controlled it before it damaged Connecticut woodlands.

This is what the Connecticut warden, R. G. Bunnell, of Eastford, had to say: "I never in all my 22 years of firefighting saw such a waste of man power and fire-fighting material as on that fire. I was told that the men were getting $1 per hour for fighting that fire. Men by the hundreds were standing around doing nothing. Some would be ordered to carry in equipment but would drop it and disappear. At one time during the day while we were pumping, some unit from Massachusetts asked if they could tap into our line and run off their 1½ hose, which they did. On checking what they were doing, the nozzle was found hanging up in a tree. Some very good fighting was done by the men under Fred Hall and Ernest Barrett of Sturbridge who owned land where the fire was burning. Also much credit goes to Nathan Armitage's crew of Ashford, Conn., one of the best trained crews that I have in my district. I personally saw hose that was burned, also knapsacks with the straps burned off. Also much credit goes to Lt. Hurlburt of the State Police at Stafford Springs Barracks, Conn., for his energy and time at the fire. We in our department are not flawless either. But no town system for me."

Further evidence of the complete breakdown of the town fire warden system on the Sturbridge fire is contained in the following letter from Elliot M. Clemence, a member of the town board of supervisors:

"In reply to your letter of February 2 for information on our disastrous fire. The first information I will give you is on October 13 at 12:44 p.m. the Charlton and Brimfield firetowers spotted this fire and notified our fire chief who responded about 3:00 p.m. and were on the fire until it was supposedly put out that evening. Unfortunately no ample patrol was left to guard this fire, consequently it burned repeatedly on and off until October 24 it became entirely out of control and through the recommendation of several large tax payers, the Board of Selectmen then declared an emergency to combat the same. During this meeting with the selectmen and taxpayers, the selectmen informed us that it was impossible to get help, fire hose, and equipment. Then and there, I asked for the privilege of using the telephone calling Eugene Winch at Willington, Conn., telling Mr. Winch how desperately we were in need of help. Through his cooperation he dispatched to us a trained crew under Mr. Bunnell of Eastford, Conn., with pump and five thousand feet of hose, and one

or two other crews from Connecticut came afterwards, and I can truthfully say that through the efforts of this crew, several cottages at the south end of the Leadmine pond were saved. All told there were approximately one thousand acres burned over at a very low acreage value and the cost to the Town of Sturbridge up to the present time is twenty-one thousand dollars or twenty-one dollars per acre which is outrageous, for the truth of the situation is three words—lack of patrol. This is very brief as we are holding our ammunition for Town Meeting Day March 8."

In other words, there was no efficient direction of this local town labor force. I dislike to make what appears to be an invidious comparison between sister states, but it is a comparison of systems, not of states, which needs emphasizing. What advantage is it to Massachusetts to point out that less than 1 percent of her forest area burned, when the loss, largely avoidable as demonstrated in Connecticut, was $300,000, and the damage ratio 24 to 1.

The System in Connecticut

By contrast, Connecticut under State Forester Austin F. Hawes and Walter O. Filley, forester of the Connecticut Agricultural Experiment Station, after experimenting with the autonomous town warden system for 20 years, secured in 1921 the law under which the state forester has the power to appoint all town fire wardens directly. The results of this system have been that town wardens are selected on the basis of efficiency in handling forest, not town, fires, and are retained permanently, as long as they remain efficient and will continue to serve. These permanent town wardens are under the direct authority of the state and district foresters, headed by a special fire chief in the central office. Fire fighting equipment, especially power pumps and hose, is rushed to any point needed. This force and these pumps were used to put out the Sturbridge fire across the Massachusetts line. How does this system work?

On November 25 the following broadcast by the chairman of the State Park and Forest Commission of Connecticut went on the air:

"The State Park and Forest Commission at its meeting today congratulated the Forest Fire Service for its successful battle against the worst forest fire hazard of recent years in which Connecticut fire losses were kept very low compared with other New England states. Forester Kienholz, who is chief fire warden, was asked to convey the thanks of the commission to his men and to the fire wardens and civilian volunteers who serve so ably. Chairman Waldo, in disclosing the commission's praise of the service, said that good organization and preparedness were responsible for Connecticut's success in meeting the fire hazard."

In terms of relative strength of central authority, these three states may be ranked as Connecticut, first; Vermont, second; New Hampshire, third.

Differences in Development

Rhode Island is a small state, and still adheres to the system of locally appointed town wardens, but due to recent greatly increased education, and cooperative efforts, escaped with 75 fires, 600 acres burned, and $2500 damage. It has suffered widespread damage in past years, traceable to the town warden system. In this state, although the town wardens are locally appointed annually, they must serve under the direction and supervision of the chief of the Division of Forests, Parks and Parkways, and must be approved by said official before taking effect. When a period of extra hazard is proclaimed by the governor, all town and district wardens are placed under his sole authority until the emergency is declared over.

Why have these differences in development of efficient statewide fire fighting organizations occurred among six states having as many features of population, political organizations (notably the strength of town governments), and forest conditions in common? I believe that the explanation must be sought not in differences inherent in any of the above factors, but rather in the historical pattern evolved by each state in seeking a solution for the fire menace.

In Connecticut, Vermont, and New Hampshire, conditions in the state are homogeneous to a great extent, even allowing for the sparsely settled forest regions in New Hampshire and Vermont. Town governments extend throughout each state. In each of these states, forestry and forest fire protection have been placed under a commission whose appointments and overlapping terms are intended to give stability of policy and freedom from political manipulation. Under this organization, confidence was created in the discretion and policies of the state organization, which enabled the commissions to persuade the towns and the legislature to give them the needed powers of appointment and contact, which were

indispensable in perfecting a modern fire fighting organization. Reduction of property loss is the direct result of this development.

Reorganization Needed

In Massachusetts the system for forty years has been one of politically appointed commissioners, changing with every party overturn. Regardless of the relative efficiency or incompetence of the successive incumbents of this office it has not led to the building up of sufficient confidence in the state organization to encourage the towns to relinquish their own political control of forest fire organization. Apparently this situation is being faced realistically for the first time by proposed new legislation which would substitute a commission form for the historical single commissioner plan, with his politically independent subordinate heads of component departments. I might add here that the combination of fish and game interests with forestry has been avoided in Connecticut, New Hampshire, and Vermont, to the great advantage of good orginzation, but has been the cause of dissension and delay in securing needed reform in Massachusetts. Maine so far is free from this combination, which seldom works to the satisfaction of either the forestry or the fish and game interests of a state.

In Maine the state is divided into two divergent halves both by the absence of settlement in the Forestry District and the larger units of forest land held in this district. The fact that the forest commissioner's chief responsibility is fire protection, within this great unorganized area, led to the perpetuation of the plan of a single politically appointed commissioner. Efficiency within the district has been maintained at a high level by state wardens. But the organized towns have experienced the same reluctance at being incorporated under the state authority and losing their "independence" as was the case in Massachusetts; while on the other hand, the larger land owners in the district were satisfied with the system and did not look with favor on its modification in the direction of a commission with overlapping terms, regarding such a move as merely opening the gate to political control of a sort not subject to the best interests of the Forestry District.

Efforts at bettering the intolerable situation in Maine revealed by the recent huge fire losses will thus probably be sought by halfway measures in which the present system of a single commissioner is retained, and cooperation with the towns extended, without the one fundamental step needed, which is state appointment of town fire wardens. Each state has to work out its own way of solving this problem of efficiency in fire protection. Is it too much to expect that a pattern which has proved successful in some of these New England states should be carefully considered in others—or must we have a third conflagration year before obvious principles of sound organization can be accepted in the states which are now smarting under the recent fire losses and looking about for preventive measures for the future?

Variability of Rooting in a Small Second-Generation Population of the Hybrid Pinus Attenuradiata[1]

J. W. Duffie'd and A. R. Liddicoet

Respectively, geneticist and research assistant, Institute of Forest Genetics, a branch of the California Forest and Range Experiment Station, maintained by the Forest Service, U. S. Department of Agriculture, in cooperation with the University of California, Berkeley.

Propagation of conifers by rooting of cuttings is an old art that has recently benefited by the findings of the plant physiologist. The forest tree breeder may now use rooting as a tool in his efforts to evaluate the heredity of his trees. In a study undertaken to use vegetative propagation of members of a variable hybrid population as a guide for selecting superior individuals, the authors found that wide differences occurred in rooting ability among members of the population, and that in general the differences corresponded in two successive years.

SELECTION among the members of a segregating F_2 hybrid population is a well-known and effective plant-breeding method. Variability of rooting capacity of different members of a segregating population is not so well known. Recently some information on this variability was obtained from a hybrid population of several hundred 3-year-old seedlings, derived from mutual wind pollination among a group of x *Pinus attenuradiata*[2] trees.

During the summer of 1946, 126 of these seedlings were selected for propagation as clones to determine whether the wide variations they exhibited had a genetic basis. They included several types: seedlings of the most vigorous growth and of conspicuously good form as well as a few dwarfs and some individuals showing chlorophyll deficiencies or other abnormalities. Rooting of cuttings was chosen as the most practical method of multiplying the types. One of the parent species and the F_1 hybrid were known to root readily (*4*), and the seedlings of this F_2 population combined the favorable characteristics of youth and considerable size.

On October 1, 1946, 10 to 30 cuttings were taken from each of the 126 seedlings. These cuttings averaged approximately 6 inches in length, but were quite heterogeneous in other respects, because of wide morphological variation among the seedlings, and because individual seedlings offered little opportunity to select numerous cuttings conforming closely to any predetermined standard. The cuttings were immersed for 15 hours in a 100-ppm. aqueous solution of indole-3 butyric acid, dipped in Fermate—a powered disinfectant, and planted at a spacing of 6 by 2 inches in pure sand of medium fineness; the sand was spread 6 inches deep over lead-covered heating cables in propagating benches in an otherwise unheated greenhouse. The beds were thermostatically maintained at 70° F., and moisture was automatically regulated by Grossenbacher's method (*2*). Since the purpose of the work was primarily to establish clones, and only incidentally to test their rooting ability, the group of cuttings were neither replicated nor randomized in planting.

After 90 days, the rooted cuttings were potted in soil and removed to a lath house. Percent of rooted cuttings varied from 0 to 100. This was not surprising, since similar results had been reported by Snow (*7*) for red maple. In fact, this variability had been anticipated as one of the interesting features of the work.

In November 1947 ten rooted cuttings from each original seedling were outplanted. Comparison of these clonal blocks will be the basis of more intensive selection of good types. Since some seedlings yielded few rooted cuttings, not all 10-plant blocks could be completed. To provide fillers, cuttings were taken on November 1, 1947, from 43 of the seedlings which had furnished cuttings in 1946.

Several factors that might be expected to affect rooting of the cuttings differed from one year to the next. In the first place, the seedlings were one year older. Secondly, they were larger, and thus offered a wider choice of cuttings. Thirdly, the seedlings had received ample irrigation in 1946, but very little in 1947. Fourthly, many of the cuttings taken in 1947 were made from shoots derived from short-shoot growing points, which became active early in 1947 following the severe heading back of the seedlings in

[1]It is a pleasure to acknowledge the assistance of Sr. Edmundo Ressini of Sucre, Bolivia, who as a part of his U. S. Department of Agriculture internship worked at the Institute of Forest Genetics from January 26 to February 1, 1948.

[2]Stockwell and Righter (*8*) have described x *P. attenuradiata* (the cross *P. attenuata* Lemmon x *P. radiata* D. Don), contrasted it with its parent species, and described some of the features of a small F_2 population similar to the one which furnished material for the present study.

1946. Lastly, the cuttings were taken a month later in 1947 than in 1946.

Perhaps as a result of some or all of these factors, plus the fact that the rooting medium was not changed or cleaned between seasons, the aggregate rooting from all 43 seedlings was lower in 1948 (90 days after planting in propagation benches) than in the preceding year (Table 1).

Since a number of zero values occurred in the rooting data for each year, a simple regression analysis could not be made. Therefore, the seedlings were grouped in five classes determined by their rooting in 1947 (0-20 percent, 21-40 percent, etc.). The means of each class for each year were computed and plotted (Fig. 1). This simple analysis, as refined as the nature of the data warrants, suggests that the differences between seedlings observed in two successive years show sufficient correspondence to support the hypothesis that they are heritable. On the other hand, the numerous wide discrepancies between 1947 and 1948 values evident in Table 1 preclude evaluation of relative rooting ability of single seedlings. To accomplish this, larger samples and more precise technique will be required. Edgerton (*1*), working with the red maple material first studied by Snow (*7*), found that relative rooting ability was fairly comparable in two successive years.

In 1947 and again in 1948 cuttings bearing male catkins rooted readily. This finding appears to contradict Jacobs' (*3*) report that cuttings of *Pinus radiata* bearing male catkin primordia would not root. On the other hand, the great inter-seedling variation in rooting response found in the present study suggests that hereditary differences between Jacobs' and our material way explain this discrepancy. Cuttings from all parts of the seedlings rooted with apparently equal success, with one conspicuous exception. The leafless terminal shoot found on many of the seedlings (shoots of *P. radiata* and its relatives often start elongation in early autumn at Placerville) invariably failed to root, and in-

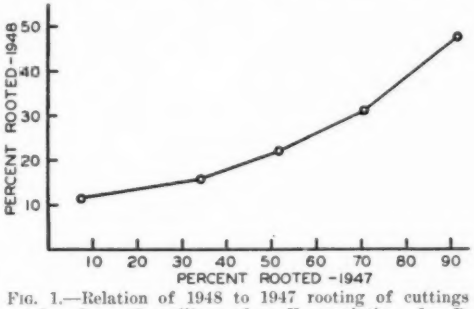

FIG. 1.—Relation of 1948 to 1947 rooting of cuttings taken from 43 seedlings of an F_2 population of x *P. attenuradiata*. Data grouped by 1947 outcome classes.

TABLE 1.—PERCENT ROOTED, AFTER 90 DAYS, OF CUTTINGS TAKEN FROM 43 SEEDLINGS OF A F_2 POPULATION OF x *P. ATTENURADIATA* IN TWO SUCCESSIVE YEARS

Clone No.	1947	1948	Clone No.	1947	1948
2	20	0	59	67	50
7	60	10	61	50	50
9	90	100	65	85	50
12	75	50	85	0	10
21	0	10	69	75	70
25	80	0	70	46	20
26	74	50	71	82	40
33	69	10	72	100	40
36	31	0	74	67	0
37	100	90	77	38	30
40	81	0	80	73	40
41	28	10	83	47	0
42	100	30	97	37	30
44	19	10	103	55	30
47	0	0	107	87	47
48	0	30	109	7	30
53	38	50	111	64	20
54	25	0	113	33	20
55	100	30	114	40	10
56	38	0	116	13	0
			123	40	10
57	63	20			
58	27	10	Average	51.7	25.7

deed died rather promptly. Rooting was often successful, however, if two or three fascicles of needles had started to emerge when such cuttings were made. Terminal cuttings bearing the uppermost whorl of branches rooted promptly and profusely. It appears likely that the effects of position from which cuttings are taken, so frequently discussed in the literature—for example, Snow (*6*), Sherry (*5*), Edgerton (*1*)—become more conspicuous in older plants. Here, too, genetic variability is possibly important.

This study furnishes additional evidence that individual seedlings vary in rooting ability. It shows also that caution should be exercised in predicting rooting of cuttings taken from single seedlings on the basis of a single year's performance. Nevertheless, it appears likely that within certain species and hybrid populations of pines, individuals may be selected which can be readily propagated by cuttings once certain technical problems are worked out. Further, when the rooting behavior of certain "standard" clones becomes thoroughly known, these clones may be used more effectively than the genetically heterogeneous materials heretofore employed, for working out many of the details of rooting technology.

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Midwestern Shade Tree Conference

The fourth annual meeting of the Midwestern Chapter of the National Shade Tree Conference will be held February 17-18, 1949, at the LaSalle Hotel, Chicago, Ill. The two-day conference is open to all who desire to attend, and more than 300 members and guests are expected to be present when the meeting is called to order by President J. C. Carter.

Problems of concern to those engaged in the care of trees, shrubs and turf, professionally or otherwise, will be discussed by able speakers. A short question-and-answer period will follow the presentation of each paper; additional opportunity for questions and expression of opinion by those attending the meeting will be provided in the Plant Forum sessions. Cards on which may be written questions for discussion at the plant forums and suggestions for the improvement of chapter activities, will be available at the speakers table. A question box will be located near the door of the meeting room to receive these cards. Officers for the ensuing year will be elected at the business meeting which will open at 9:00 a.m. Friday.

The annual banquet will be held Thursday evening, February 17, in the Illinois Room. Special entertainment and dancing will follow.

Chemical Brush Control in Forest Management

Paul Zehngraff and John von Bargen

Silviculturist, Lake States Forest Experiment Station, St. Paul, Minn.

In charge of timber management, Chippewa National Forest.

Several million acres of potentially valuable pine land are occupied by brush in the northern Lake States. Removal of the brush by cutting is too expensive to be practiced. Trials of chemical herbicides in northern Minnesota have given promising results in control of hazel[1] brush. Results of these tests on the Chippewa National Forest are reported here.

IN THE Lake States region, particularly in northern Minnesota, when a forest canopy is opened so that the crowns will not close within 2 to 4 years, brush species usually invade all but the lightest soils. As a result of past heavy cuttings, coupled with more intensive fire protection during later years, extensive areas have been invaded by dense brush, particularly hazel. Such brush prevents, or greatly hinders, the establishment and growth of natural regeneration. It hampers ground preparation for planting and provides serious competition for the planted trees which then must be released at high cost. Foresters have been seeking a method more efficient and cheaper than hand labor or mechanized methods and less dangerous than fire to combat this menace. Some recently developed herbicides seem to offer good possibilities, and several agencies are investigating their uses and effectiveness. One such series of studies has been made on the Chippewa National Forest.

In 1945 the Lake States Forest Experiment Station began a small-scale experiment to control brush with chemicals on the Pike Bay Experimental Forest. This trial was made primarily to test the effectiveness of several chemicals for plantation release. Little effort was made to determine the quantities of chemical used or needed per acre, and most of the concentrations were too heavy. The planted trees, as well as the brush, were killed or severely injured. Later examinations, however, showed that the brush kill was permanent. On the treated plots brush has not yet re-invaded the ground which is now covered with sod.

In the spring of 1947 the supervisor[2] of the Chippewa National Forest asked the Experiment Station to cooperate in conducting a series of controlled tests. The tests were made mainly to determine effectiveness, amounts of chemicals[3] and water needed, costs, season, and method of application. In all trials the chemicals were mixed with water and applied by spraying.

The chemicals were used to overcome three forest management problems: (1) elimination of brush prior to planting in order to decrease or eliminate ground preparation and possibly to reduce future plantation release costs, (2) release of young pine reproduction and plantations suppressed by brush cover, and (3) elimination of brush under mature red pine in preparation for a regeneration cut.

The trials were of sufficient size to obtain convincing results. In the first tests the area embraced 7.0 acres within which were tried two chemicals, each with three levels of concentrations. Duplicate tests were made of each chemical concentration, one in May, and the other in June, 1947. The average brush density was 25,650 stems per acre. Of this, 83 percent was hazel. The second test was segregated into two phases: (1) release of planted trees by low levels of chemicals, and (2) release of natural white pine reproduction. The release of planted trees was done on 1.2 acres, using two chemicals, three levels of concentrations, and two replications. The spraying was done in July, 1947. Vegetation was mostly herbaceous. An area of 1.5 acres was devoted to release of natural reproduction, and the test involved two chemicals, three levels of concentration, two replications, and two seasons. The dates of applications were September 1, 1947 and July 1, 1948. The average brush density was 18,320 stems per acre, of which 88 percent was hazel. The third test covers the same conditions as the last part of the second test.

The areas were examined for brush kill in the fall of 1947 and again in the summer of 1948. These examinations indicated that the minimum application of chemicals had not been reached. All the brush had been killed, even by the low levels which involved 2-4,D (83 per-

[1]Hazel brush is used to refer to *Corylus americana* and *Corylus rostrata*, the American and beaked filmert.

[2]The authors wish to acknowledge the interest, initiative, and cooperation displayed by Supervisor Marvin Smith, Chippewa National Forest, in obtaining most of the chemicals, providing proving grounds, technical assistance, and otherwise encouraging the project.

[3]See Table 2 for chemicals used.

cent) at the rate of 2½ pounds per acre and Ammate at the rate of 50 pounds per acre. One additional test was therefore established on July 1, 1948 to determine the effective minimum of these and additional chemicals. The plot area covered 1.8 acres involving six chemicals,[4] three levels of application for each, and two replications. The maximum levels of chemicals used was lower than the minimum used in previous tests.

During the late summer of 1948 all the plots were examined on a sampling basis using transects covering 20 percent of the area. Observations on degree of injury, mortality, and resprouting were tallied for all stems.

Effectiveness of various chemicals on different species has been described by Day.[5] Results of the Chippewa tests substantiate these earlier findings. Inasmuch as Minnesota foresters are concerned primarily with hazel brush, this report of results will be confined to that species.

The studies show clearly that hazel brush can be successfully eliminated by the use of herbicides, and at low costs. The season during which the chemicals are applied is of utmost importance, both in regard to a thorough kill and in minimizing resprouting. Full development of the foliage at the time of spraying is a prerequisite. The best season, therefore, is from July 1 to August 15, although satisfactory killing was obtained as late as September 1. Spraying prior to July resulted in the most resprouting. When herbicides are used in connection with mechanical ground preparation prior to planting, such preparation should be delayed until the following year, after the brush has been killed. When done the same year it results in considerable resprouting. Other combinations of chemical application and mechanical ground preparation are still being studied.

Ammate kills much quicker than any of the other herbicides used, but, except at such exceedingly high levels of concentrations as 200 pounds per acre, it results in much more resprouting than occurs following the use of 2-4,D preparations. The difference in resprouting following use of higher levels of 2-4,D was insignificant.

The effectiveness of herbicides as a release measure on natural reproduction looks very promising (Table 1). A brush cover of 18,320 stems per acre with an average height of about 7 feet was mostly killed. On the other hand, the foot-high pine understory of 3,360 white pines and 190 red pines per acre was largely uninjured, possibly because of the protection afforded by the overtopping brush.

As a release measure 2-4,D is considerably safer than Ammate, particularly after the pines have hardened off during late summer. Also a brush kill satisfactory for release purposes is obtained by using 2-4,D as late as September 1.

Release of plantations from heavy herbaceous vegetation by low concentrations of 2-4,D (one pound or less per acre) gave the same effect as a killing frost. Although it was done during their growing period, the injury to pine seedlings underneath the brush was slight. Care was taken, however, not to spray directly on the pines.

As a means of eliminating brush ground cover prior to regeneration cuts in mature pine, the herbicides show promise. The only definite result to date of this phase of the test, however, is that the brush was killed. There has been no seed production in the stand since, and con-

[4]See Table 2.

[5]Day, Maurice W. The chemical control of certain forest shrubs. Mich. Agric. Expt. Sta. Quarterly Bul. 30:427-436. 1948.

TABLE 1.—EFFECT OF CHEMICAL HERBICIDES ON HAZEL BRUSH AND PINE SEEDLINGS

When Sprayed	Chemicals[1]	Average effect of herbicides							Mil-acre plots
		On hazel				On pine			
		Uninjured	Heavy injury[2]	Dead	Root sprouts	Uninjured	Heavy injury	Dead	
		Percent							*No.*
9-1-47	2-4,D	1.1	9.4	89.5	0.0	99.7	.3	0.0	60
7-1-48	2-4,D	0.0	.2	99.8	0.0	97.5	1.7	.8	60
9-1-47	Ammate	1.0	65.3	33.7	5.8	60.8	12.4	26.8	60
7-1-48	Ammate	0.0	0.0	100.0	0.0[3]	35.9	22.4	41.7	60

[1]2-4,D at the rate of 2½ pounds per acre; Ammate at the rate of 50 pounds per acre.
[2]This includes resprouting stems.
[3]Some root sprouting expected the second year.

sequently the regeneration cut has not been made.

During the analysis of the results it became quite evident that brush density is the determining factor in specifying the amounts of chemicals as well as water needed per acre in order to obtain satisfactory brush kill. Where low amounts of chemicals and water were used in high brush densities, the results were unsatisfactory, while in the low brush densities these low quantities worked satisfactorily. High amounts of chemicals with low amounts of water produced less satisfactory results on heavy brush densities than did low quantities of chemicals with high amounts of water. Foliage measurements of several hazel stems chosen at random showed an average leaf surface of 8 square feet per stem. From an analysis of the several tests it appears that a gallon of water will satisfactorily wet approximately 4,000 square feet of leaf surface. The best efficiency in wetting was obtained by using a spray density somewhere between a heavy mist and a fine spray. Too fine a spray has a tendency to drift and evaporate. If the spray is too coarse there is loss due to dripping.

Based on the experiences on the Chippewa National Forest, a tentative guide has been developed to show the amounts of certain chemical herbicides needed to obtain satisfactory kill of hazel brush (Table 2).

Two more chemicals were used in the 1948 tests, namely STA = Sodium Tricholoroacetate (70.6 percent) and ATA = Ammonium Trichloroacetate (69 percent). It is too early to determine the effectiveness of either of these two chemicals. They both work slower on brush than the 2-4,D preparations and at the end of the first summer ultimate mortality has not yet been reached.

In all but one case the chemical solutions were applied with back-pack fire pumps, using and adjustable nozzle (Indian F. 147). The accomplishment on a sample plot basis was found to be five man-hours per acre in average brush densities of 20,000 to 30,000 stems. Large equipment was used in one case. This consisted of a 4-wheel drive truck upon which was mounted a 120-gallon tank and a pump developing 100 pounds per square inch nozzle pressure. Inasmuch as trails had to be bulldozed ahead of the truck, this arrangement was found to be no cheaper on a sample plot basis than the use of back-pack pumps. More work is needed to develop application techniques by mechanical means in order to reduce the costs still further.

The trials show, however, that about 20,000 hazel stems per acre may be eliminated at a cost of $6 to $7 by hand spraying on an experimental basis. Cutting such brush costs several times as much and results in only a temporary release.

TABLE 2.—AMOUNTS OF CHEMICAL HERBICIDES REQUIRED TO KILL 1,000 STEMS OF HAZEL BRUSH

Chemicals	Amounts[1]	Costs
Trade name		*Dollars*
2-4,D[2]	0.5 Ounces	.07
2-4,5[3]	0.1 Pint	.10
Esterone 44[4]	0.1 Pint	.10
Ammate[5]	1.0 Pound	.13

[1]To be applied in 2 gallons of water.
[2]2-4,D = Ammonium 2-4, Dichlorophenoxyacetate (83.5 percent).
[3]2-4,5 = Isopropyl 2-4,5 Trichlorophenoxyacetate (43 percent).
[4]Esterone 44 = 2-4,D Isopropyl Ester (44 percent).
[5]Ammate = Ammonium Sulphamate.

We Present

Elers Koch: 40-Year Federal Forester

Koch, rhyming with watch and like that compact timing device, is small, wiry, tireless, and well-balanced. Last summer, in his 67th year, he "polished leather" as guide and advisor of the "youngsters" on the annual American Forestry Association pack string trek into the Flathead Sun River Wilderness area. He refuses to grow old; just mellows a little like the spot of wine he loves on occasion.

Looking back over his rugged life as a pioneer forester, Koch said that his greatest thrill came in 1923 when he and two others of an official Forest Service party were first to climb mighty Granite Peak. Comparable to Grand Teton and located just northeast of Yellowstone Park, it is the highest point in Montana. Knifing the sky when viewed from afar, its 12,842 feet of ugly, black granite upthrust has turned back all but six aspirants since. In 1940, at 60 years and January, another mountain episode nearly cost his life. Ascending Mt. Stuart in a climbing party, he swung toward the edge of a glacial cirque for a better view. Winter winds had moulded a cornice of unpacked snow over the precipice. Suddenly a hundred tons of snow rim gave way to plunge Koch in roaring avalanche down the steep, rocky slope. He regained consciousness 500 feet below in darkness and pressure, but luckily—so very luckily—one outstretched hand stuck out of the snow mass. Near panic, he breathed the limited air in the snow until his friends dug him out. Battered and sprained, he said the pleasurable week of recuperation was worth it all—good food, friendly visits, and hearty laughs.

Elers Koch was born December 12, 1880 at Bozeman. He and his brother Stanley lived astride a succession of horses and all under the wide Montana sky was their back yard. Attaining college age, he entered Montana State College. There Lt. George R. Ahern, military instructor detailed from the Army and who later became head of the Philippine Forest Service, offered some lectures on forestry. Elers attended these in 1898, one of the first regular courses in forestry given in the United States. He entered the Yale Graduate School of Forestry and was graduated in 1903.

As Koch left Yale, Pinchot was sending "his young men" to ride the forests and mountains of all parts of the West to map and report on the considerable bodies of forest land still remaining in public ownership. By fair means or foul, the best forest land was rapidly passing into the hands of lumber companies. Time was short for the new conservation idea. Koch signed on and had the thrill of establishing the boundaries of several of the country's national forests: the Shasta in California and

Elers Koch

the Gallatin and parts of the Lewis and Clark and Beaverhead Forests in Montana. What better monuments to professional judgment could a forester ask?

Following the boundary establishment job for the forest reserves, he became forest inspector in 1905. Marriage to Gerda Heiberg-Jürgensen from Denmark in 1906 founded a family of three sons. The newlyweds settled in Missoula and Elers became forest supervisor for the then combined Lolo, Bitterroot, and Missoula Forests. A forest supervisor for 11 years, he advanced to district fire chief in 1919. In 1921, he became assistant district forester and chief of the Division of Timber Management, where he served until his retirement in the spring of 1944. He was elected a Fellow in the Society of American Foresters in 1940. In 1943 he was recognized by *Who's Who in America*. The author of many technical writings; among his best is "The Passing of the Lolo Trail," Journal of Forestry 33:98-104. It is outstandingly beautiful as well as professionally meaty.

The achievements of 40 years of hard-driving, extra measure, living-the-job type of forestry cannot be pictured here. It is too big for that, lying out on the land, in the hearts of his associates, and in the forestry record of the northern Rockies. A few examples will serve to outline the scope of Koch's contribution to the profession: In 1909, as forest supervisor, he located and laid out the Savenac Nursery at Haugen, Montana. It was then the largest nursery in the Forest Service, is the only one in Region 1, and has supplied 100 million trees to date. When Elers put in Savenac Nursery, present-day nursery knowledge and texts were yet unborn. The know-how was then much more directly personal. He has watched many of his white and ponderosa pine plantations grow from seed to currently thrifty 35-foot poles.

While district chief of Timber Management, he fathered much of the early western white pine silviculture and has had the satisfaction of seeing it weather the grueling and shifting sands of time. Koch established the early Forest Service western white pine marking policies. His standards for white pine seed trees were so effective that foresters still refer to a noble specimen as a "Koch Tree." Elers stood fast by white pine when allegiance to "King" *monticola* began to quaver in the face of blister rust and protective policies favoring the climax forest. Western white pine silviculturists agree that his courage, keenness, and insight in their field cannot be overemphasized.

In the northern Rockies the years 1910, 1914, 1917, 1919, 1926, 1931, and 1934 stand out in the glow of holocaust. Before 1919 fire control efforts were feeble, but in that year Koch, then district fire chief, initiated real progress in fighting large fires. Associates say that his major contribution to fire control was in establishing the first formalized fire training. In the business of blaze battling his genius cropped out in such products as (1) skilled boards of review on fires, (2) pioneering in fixed lookout networks and seen-area maps, (3) an ingenious map orienting table, and (4) a fire tool that bears his name. Fire boss and fire fighter *par excellence*, the Region had or has few men to match his skill and stamina.

A lot of history of the Northwest lies under the roof on Beckwith Avenue in Missoula where Elers Koch is retired. He can personally recount the story back to near pioneer times. His father's collection of priceless, autographed historical first editions extends the account back as far as the written record. Originals by Bodmer, several of which appear reproduced in DeVoto's book, *Across The Wide Missouri*, are there in sharp, copper-etched, hand-colored splendor. Elers has personally sought out the trail and vantage points that Lewis and Clark vividly recorded on their journey through the region. His eyes sparkle and one hears Indian drums and leather squeaks and clank of horse gear when he tells of early days—days of fur pelts, mountain men, forest, and frontier.

Koch—colorful, modest forest man of the early West. Eagle-eyed, razor edge thinker, able writer, pioneer administrator, tough in soul and body—a forester of which the U. S. Forest Service is immensely and justifiably proud. Good luck Elers Koch, and long, sunny days of well-earned enjoyment to you.

BEN M. HUEY,
Northern Rocky Mountain Forest and Range Experiment Station.

Reviews

Forest Products Research Guide. 261 pp. Lithographed. Third Edition. National Lumber Manufacturers Association, Washington, D. C. 1948. $5.

Compiled under the auspices of the National Lumber Manufacturers Association's Committee on Products and Research, of which Carl A. Rishell is project manager, this guide book is unique in its field.

It provides the most complete record extant of the tens of thousands of forest products research projects completed or under way, and lists the organizations, foreign and domestic, responsible for them.

This third edition is superior to the earlier issues as it includes research projects not previously listed because of their secret or confidential nature during the recent war. Moreover, it has been improved by indexing which provides quick reference to the kinds of research undertaken by each organization.

A valuable section is the list and cost of publications on forest products utilization together with the names and addresses of the publishers.

It is an extremely useful reference work.

HENRY CLEPPER.

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Black Hills National Forest 50th Anniversary. U. S. Department of Agriculture, Forest Service. 43 pp. Illus. Washington, D. C. 1948.

Last summer the Black Hills National Forest celebrated its 50th birthday.

In September 1898 administration of this now famous "forest reserve" began, and to commemorate the event Region II has published an attractive forty-three page, illustrated booklet. It is more than a history of the Black Hills National Forest—it is in part a picture of the men and times that helped make forestry a reality, for in a sense the Black Hills Forest was the vanguard and proving-ground of this great national movement.

To American foresters the Black Hills National Forest holds a very special place in conservation history. It was the first national forest to see the beginning of regulated cutting, and the files at Deadwood still hold the yellowing papers of "Case No. 1"—the first timber sale made by the Forest Service to the Homestake Mining Company. The names of many men who helped make forestry history have at one time or another been connected with the Black Hills National Forest. As a youngster Henry Solon Graves surveyed it; Gifford Pinchot used it as a barometer to forecast the coming of anti-conservation storms. Agriculture's famous Secretary "Tama Jim" Wilson tramped over it on inspection tours, and Professor Toumey had established pine plantations there, as many a generation of Yale foresters has cause to remember. As supervisors, Paul Kelleter and Georgie Duthie put their administrative brands on it, and here old Cap Smith of early Custer days served as one of the best beloved rangers of the Service.

For the old-timers of Region II this little publication will bring back many a pine-scented memory, and for all foresters of whatever region or time it should bring a sense of pride and tradition. One would like to think that this publication may set a trend for other regions, since so much of forest history is being lost through lack of systematic collection and preservation that in days to come it may be difficult to recapture not only the flavor but even the actual events that were part of the fight to establish our national forests.

TOM GILL.

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Allmänna Skogliga Produktionstabeller (General Forestry Yield Tables). By Tore Christerson. 42 pp. Published by the author in Örebro, Sweden. 1948. 10 Kroner.

The tables presented in this publication are detailed and complete yield tables for either pure or mixed pine stands of Sweden. But they are valid only for stands which have been thinned frequently. Although much of the information cannot be applied in this country, the tables indicate the detail that will probably be required here as the practice of forestry intensifies. The site classification system used by the author is somewhat complicated. To understand it thoroughly one would no doubt have to have

available a previous article mentioned in the preface.

It is interesting to note that for site class .6c, thinnings constitute 22 percent of the total yield at 50 years, 45 percent at 100 years, and 76 percent at 170 years. The net annual growth becomes a minus figure at 205 years; and that the maximum annual growth occurs at 43 years. The highest average total yield is at 98 years.

The author has translated his explanations into English. The translations, however, are not well done and the original Swedish must be read to understand it fully.

It is a publication which should be of interest to students of forest economics and management.

T. SCHANTZ HANSEN,
Forest Experiment Station,
University of Minnesota.

❧❧❧

Dictionary of Genetics. By R. L. Knight. 183 pp. Chronica Botanica Co., Waltham, Mass. 1948. $4.50.

This dictionery is very good; a first edition can hardly be perfect. The writing of a dictionary is a tedious and often thankless job; an approach to perfection can only be obtained through use and repeated revision. This book can be recommended to all foresters working in genetics and to those keenly interested in this field. It certainly should be in the library of every forestry school.

The need for a dictionary of genetics terms is well-stated in the author's preface. Lack of such a dictionary has been responsible, in part at least, for the coining of new words and the assigning of new meaning to old established terms. The author notes that "Genetic literature would be more readily understood if writers had, where possible, used an existing term instead of coining a new one. This would have avoided the use for one and the same thing of centromere, kinetochore, kinomere, kinetic constriction, primary constriction, centric constriction, spindle attachment, insertion region, attachment region, and attachment constriction."

The author's aim is to provide a full glossary of genetic and allied terms. In view of the many technical terms in use, terms sometimes ill-defined by the coiners, this dictionary provides remarkably good genetics coverage. Since genetics touches upon so many fields, "allied terms" could run to an excessive number of entries. Actually, the number included by Knight is not excessive, but it is difficult to understand the basis for their selection. The inclusion of such words as *immunity,* complete resistance to any particular disease or pest, *inarching,* referring to plant grafting, and some others, seems unnecessary. These words are not used in a special sense in genetics and they are defined in any standard dictionary. On the other hand, the term *sterility,* which undoubtedly will continue to be misused in genetics writings, is omitted.

The citation for original definitions or original usage is given for some terms; this is excellent and could very well be carried further in future revisions.

Synonymy is noted under individual entries, but there is no indication of obsolescence or preference in present usage. For example, the *clone,* a term which some day will be in common use among foresters, has also been called the *klon.* Today the word *klon* is seldom used, at least in this country. Both terms are defined, synonymy is indicated, but the user of the dictionary is not informed as to which term might be preferred. An appended list of synonyms, with present preferences indicated, would go far toward clearer genetics writing. The confusion of a dozen synonymous terms can hardly be avoided until someone takes upon himself the duty of the lexicographer, to point out the current usage of the best authorities. It may be argued that this should be left to some committee on genetics terms; perhaps, but it surely is one of the functions of a dictionary.

A number of well-chosen formulae and tables useful in the field of genetics are appended.

ERNEST J. SCHREINER,
U. S. Forest Service.

Current Literature

Compiled by MARTHA MEELIG, *Librarian*
The New York State College of Forestry
Range Management Section Compiled by
FRANCES FLICK, *Library, U. S. Department of Agriculture*

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Society Affairs

Officers and Members of the Council—1948-1949

CLYDE S. MARTIN, *President*
Weyerhaeuser Timber Company,
P. O. Box 1645,
Tacoma 1, Wash.

WILLIS M. BAKER,
Forestry Relations Division,
Tennessee Valley Authority,
Norris, Tenn.

PAUL M. DUNN,
School of Forestry,
Oregon State College,
Corvallis, Oreg.

JAMES C. EVENDEN,
Bureau of Entomology and Plant Quarantine,
U. S. Department of Agriculture,
Coeur d'Arlene, Idaho.

CHARLES F. EVANS, *Vice-President*
U. S. Forest Service,
Glenn Building,
Atlanta 3, Ga.

CHARLES H. FLORY,
State Commission of Forestry,
Calhoun State Office Building,
Columbia, S. C.

WILLIAM B. GREELEY,
West Coast Lumbermen's Association,
4444 White-Henry-Stuart Building,
Seattle 1 ,Wash.

CLARENCE S. HERR,
Woods Department,
Brown Company,
Berlin, N. H.

HENRY CLEPPER, *Executive Secretary*
825 Mills Building,
17th Street at Pennsylvania Avenue, N. W.
Washington 6, D. C.

RICHARD E. MCARDLE,
Forest Service,
U. S. Department of Agriculture,
Washington 25, D. C.

DEWITT NELSON,
Division of Forestry,
Department of Natural Resources,
Sacramento 14, Calif.

JOHN W. SPENCER,
U. S. Forest Service,
Post Office Building,
Denver 2, Colo.

The Boston Meeting

THE 1948 annual meeting of the Society of American Foresters was held at the Hotel Statler in Boston, Mass. on December 16, 17, and 18, 1948. A preliminary meeting of Section delegates and Council was held on December 15. Registered attendance of Society members and guests exceeded 600.

Host for the meeting, which featured the observance of the fiftieth anniversary of American forestry education, was the New England Section of the Society. D. B. Dermeritt was chairman of the Program Committee, other members of which were J. Miles Gibson, Joseph S. Illick, Harvey J. MacAloney, and Albert D. Nutting. The Committee on Local Arrangements was composed of Harris A. Reynolds, chairman, Edmund C. Filler, F. G. Hills, Harold B. Shepard, and Karl A. Swenning, who also served as banquet toastmaster.

Sessions of the nine subject divisions were held during the morning and afternoon of Thursday, December 16. Theme of the Division of Forest Products' meeting was "Utilization of Low-Value Timber and Its Relationship to Forest Management."

What private forestry is doing in the Lake States, South, West, and Northeast was featured on the program of the Division of Private Forestry.

Eight papers were presented in the Division of Silviculture.

Coordination of wildlife management with timber management was stressed by the Division of Forest-Wildlife Management.

Forest grazing was the general topic of the Division of Range Management.

Morning discussion in the Division of Forest Economics centered around "Problems of the Committee on Scope and Method of Research in the Economics of Forestry." In the afternoon the topic was "Education, Training, and Demand for Forest Economists."

Recreation trends, priorities, and reports of the status of airplane use in recreational areas were featured by the Division of Forest Recreation.

Various problems of interest to educators were presented at the meeting of the Division of Education.

Formal organization of the new Division of Public Relations was effected on Thursday afternoon following presentation of papers on industry's approach to forestry public relations, teacher's workshops, and regional coordination in public education.

Meetings of the Council, reported elsewhere in detail, were held on the morning and evening of December 15 and briefly on the morning of December 17 before the first general session, for which Joseph S. Illick served as chairman.

Theme of the first general session was "The Golden Anniversary of Professional Forestry

Education in America, 1898-1948," during which recollections of past events and tracings of developments were presented.

That afternoon was devoted to Society affairs at which time reports of officers and committees were given.

The Society Dinner

Preceding the annual dinner, the members and their ladies were guests of the New England forest products industries for a delightful social hour. The banquet, attended by 415 persons, featured talks by William P. Tolley, Chancellor of Syracuse University, and Albert W. Trueman, president of the University of New Brunswick, who both stressed the importance of broad cultural education as well as technical training for foresters.

Award of the Sir William Schlich memorial medal was made to Prof. H. H. Chapman "for distinguished service in forestry" by President Martin. This medal has previously been presented to only four other persons: Franklin D. Roosevelt in 1935, Gifford Pinchot in 1940, Henry S. Graves in 1943, and William B. Greeley in 1946.

In honor of Sir William Schlich, an eminent international leader in forestry, a fund was established fifteen years ago by foresters of English-speaking nations in recognition of Sir William's great services to forestry in India, England, and throughout the world. The Society of American Foresters is custodian of the periodic grants made to the United States by the Schlich Memorial Foundation, and from time to time awards the medal for noteworthy achievement in the advancement of forestry.

Another surprise presentation was made when Miss L. A. Warren, business manager, was tendered a testimonial gift, a complete eight-place setting of silverware, in recognition of her twenty years of loyalty and service. The presentation was made by Dean S. T. Dana in behalf of her many friends in the Society.

Also on the banquet program were musical presentations by the Troubadours, a double quartet of the Boston Rotary Club. By popular request E. D. Fletcher ("B. De la Flooche") gave a humorous reading of *Bienvenue*, his poem printed on the banquet program. Another pleasantly informal touch was the group singing of "Alouette" led by DeWitt Nelson.

The meeting closed at noon Saturday, December 18, following presentation of several papers, related to forestry in the Northeast, during the general session that morning for which Louis J. Freedman acted as chairman.

Sidelights on the annual S.A.F. meeting were a meeting of executives from the 22 approved forestry schools on December 16, a meeting of consulting foresters during the evening of December 16, showings of several forestry movies the same evening, reunions of graduates of several schools, and recorded interviews of over a dozen forestry leaders with Tom Page, agricultural director of radio station WNBC, New York, for later broadcast.

Report of the President

Clyde S. Martin

ON MARCH 23, 1903, a little more than forty-five years ago, the President of the United States, Theodore Roosevelt, made a talk before the Society of American Foresters.

Among other things he said:

"I believe that there is no body of men who have it in their power today to do a greater service to the country than those engaged in the scientific study of, and practical application of, approved methods of forestry for the preservation of the woods of the United States. . . .

"And now, first and foremost, you can never afford to forget for one moment what is the object of our forest policy. That object is not to preserve the forests because they are beautiful, though that is good in itself, nor because they are refuges for the wild creatures of the wilderness, though that, too, is good in itself; but the primary object of our forest policy, as of the land policy of the United States, is the making of prosperous homes. It is part of the traditional policy of home making of our country. Every other consideration comes as secondary. . . .

"Keep in mind the fact that in a government such as ours it is out of the question to impose a policy like this from without. The policy, as a permanent policy, can come only from the

intelligent conviction of the people themselves that it is wise and useful; nay indispensible.

"You have created a new profession of the highest importance, of the highest usefulness to the State, and you are in honor bound to yourselves and the people to make that profession stand as high as any other profession, however intimately connected with our highest and finest development as a nation."

At this time I wish briefly to outline the progress of our profession and of our Society since that historic day forty-five years ago.

At that time we were a small group of young men imbued with high ideals of public service led by other young men, who were determined to maintain those ideals and to create in this country a profession which would devote itself to the greatest good to the greatest number of our people.

Today we represent a body of over 12,500 professional men and women still devoted to those ideals of public service. The forester who does not honestly desire to promote better forest management on every acre of forest land in this country is a rare individual, whether he be employed by a public agency, by private timberland owners, or is working independently. Our members are found in every forested area in the United States and in many foreign countries, and men with a forestry education are engaged in many occupations. The profession, represented by that handful of enthusiasts in 1903, has in forty-five years made this country of ours forestry minded. We have created no Utopia, and in many ways we are still far from the goals to be reached, but we are making real progress.

The Society Has Grown

The Society of American Foresters has grown with and guided professional development. It has weathered many storms and survived the emotional and economic strains of two world wars. Today it is stronger than ever before and faces a future bright with the promise of greater growth and more constructive accomplishments. It has passed through one period of development when forestry was of necessity, more or less of a crusade. Then, under the direction of our leaders of forestry education, it came through a period of more or less bitter dissension and controversy. Now it faces the future with a broad and diversified membership, finished, I hope, with the growing pains of youth, and basing its future on the irrefutable ground of sound economics and the needs of our country.

Its greatest single accomplishment to date, in my opinion, has been that of placing forestry education in this country on a high plane of technical standards. Without adequate technical training it would have been impossible to secure professional recognition. It has been influential in starting a groundwork of forestry legislation on both state and national levels. At first this was based almost entirely on protection and conservation of forest resources. Today this groundwork is gradually developing into sound forestry codes based on the economics of producing recurring crops of forest products for the use of our people.

Problems Ahead

Your present Council, which is truly representative of our diverse membership and group interests, upon taking office in January 1948, believed that the time had arrived when the Society should consolidate its gains and readapt its organization to the needs of the future.

The first problem was that of finances, basic to sound organization, and to adequate services to members and to the profession. We were running an annual deficit and eating into hard-won reserves at a time when we should have been expanding our services and adding to our reserves for the uncertain years ahead. That the membership approved the Council's recommendation on dues despite constantly rising costs of living and many cases of individual hardship, is a tribute to the spirit of loyalty inherent in a forester's makeup. You, the membership, have have given to the Council the responsibility of returning to you in services and accomplishment the full value of the dollars you are contributing to the Society. I can assure you that the Council will give its very best efforts toward living up to this responsibility.

For nearly two decades we have been talking about the profession's need for a sound code of ethics. For the past two years, a small committee has been hard at work preparing a framework for such a code. After securing the opinions of a majority of the Sections, certain canons of ethics have now been adopted by an overwhelming vote of the membership.

These canons are not perfect. They are probably not adequate. But they are not static

and are subject to revision, to deletions, or additions. The committee which will be appointed to interpret and administer this code will undoubtedly suggest changes from time to time. After study and full discussion, such changes will be subject to future referenda.

Sooner or later, both for the protection of the public and the maintenance of professional standards, foresters will be required to secure a license to practice. This is a recognized procedure with other professions. It is important when state laws are passed dealing with the licensing of foresters for public practice that they should meet adequate standards in their requirements and also be reasonably uniform among the states. For this reason a national committee of the Society is now working upon a definition of such standards, which may be adjusted to fit the constitutional requirements of the various states and which may be supported by our members, where the need and desire arises.

In my opinion, one of the principal organizational adjustments needed by our Society, is a procedure through which the maximum number of our members may be informed of problems facing the national Society, be given an opportunity to study those problems, and then to pass on their opinions to the Council in time to guide Council action.

Sections and Subsections

The Society has outgrown its original composition. First there was only one group, centralized in Washington, D. C. Then, with the decentralization of federal forestry, regional groups were formed and became Sections. Then the Sections became too large and covered so much territory that they split into smaller Sections. Of recent years, with the dispersement of foresters into many groups and into every forested county in the country, our present Sections have become too large to permit frequent meetings and full discussion of forestry problems, both local and national. As a result many of our members, particularly the younger members who are located in out-of-the-way places, have little opportunity to participate in Society affairs. The Society to them means only receiving the JOURNAL and *Forestry News* with attendance at a meeting perhaps once or twice a year, and these Section meetings have become so large that there is little opportunity for participation by the average member.

This has led to the spontaneous formation of smaller local groups or subsections. Many of these operate very informally with no set schedule and no formal committees. Others prefer to function in much the same manner as Sections with elected officers and standing committees. The meetings of these smaller groups, which I have attended, have been much more vital, with more individual interest than is ofttimes manifested in the larger meetings. There is time for full discussion of field and local problems and often these smaller groups undertake projects of real interest to their communities. They advertise the fact that foresters are working in those communities, and they attract members who otherwise would have little interest in the national Society.

The Council hopes to regularize the formation of such groups within our Society structure. This is something that cannot be hurried. It is entirely voluntary and will, I am sure, gradually gain momentum as the desire for participation in Society affairs spreads.

Where such groups are organized, I believe that we should encourage and make use of these smaller units of the Society in formulating and giving effect to Society opinion.

There should be a record of the officers and location of these groups available in both our sectional and national headquarters. They should function as component parts of the Section, and any reports or projects undertaken by these smaller units should be studied and correlated at a Section meeting held at some time prior to the annual meeting of the Society.

I am aware that in many of the Sections this may be impractical or even inadvisable at the present time, but I hope that eventually we may be able to outline our national objectives and problems early each year following the year's end Council meeting, and promptly transmit such matters to our Sections and through them to the local units. Then after full discussion and study, the opinions and thinking of a real majority of our members would be made available to the Council through the Sections.

This need has been felt by the Council for a number of years and was given much thought by past-president Shirley Allen. I have attempted partially to meet it by sending out quarterly letters to Council members, Section and Subsection chairmen. The results have been gratifying and well worth-while, but in my opinion they do

not go far enough to give your officers and Council a real cross-section of membership thinking. The solution for this problem is not an easy one, and I will welcome the ideas of any of our members which may help in reaching an answer.

Your Council and your officers have admittedly made some mistakes during the past year. We welcome constructive criticism and suggestions. We do hope, however, that we can prepare the groundwork on which to build a better Society to represent our profession and that your new Council to be elected next year will be able to celebrate the Society's 50th year as a half-century of real progress and accomplishment.

Report of the Editor-in-Chief

Hardy L. Shirley

A YEAR ago the editorial board faced three critical problems: cost of printing the JOURNAL had increased by more than 50 percent; manuscripts were being received twice as fast as they were being published; coverage of the field of forestry, particularly private forest management, was inadequate. Appeals to the Council revealed little hope of increasing the size of the JOURNAL inasmuch as the budget of the Society as a whole was out of balance.

At the request of President Martin, Harry Thorn, a member with wide experience in advertising, made a thorough study of the JOURNAL, department by department. His report suggested both economies and changed appearance. It was studied carefully by the Editorial Board and by members of the Council. As a result, the JOURNAL will join other devotees of the "new look." The JOURNAL new look differs from that of feminine attire in economical rather than lavish use of material, and greater rather than less craftsmanship in makeup.

The business manager has made a renewed effort to solicit advertising for the JOURNAL OF FORESTRY. She has also urged the Section officers to collaborate with her in this endeavor. Advertising revenues have been almost doubled as a result. Further increases will require intensive effort.

The Editorial Board has adopted a stricter policy on editing and rejecting manuscripts. During the 13-month period covered by this report 158 manuscripts were received, of which 38 were rejected, and 40 were returned to authors for revision. It is well to say here that no manuscript has been rejected because the quality of writing was below JOURNAL standards. If the author had a real contribution to make, the associate editors helped him put it in shape for publication. Sometimes this involved condensing long manuscripts for the Notes or Points of View departments. Thereby the quality of articles appearing in the JOURNAL has been kept at a high standard, and authors who had new information or ideas to contribute were given an opportunity for expression.

It is expected that the membership in general will approve of these three steps that the Editorial Board has taken to live within its income.

The fourth step is less defensible. The board has virtually ceased to request special articles. Balance among the several fields of forestry has suffered thereby. One manuscript was received in the field of forest recreation and wildlife and none in private forestry. Two have dealt with range management and only five with forest management and administration. The membership has generally urged an increase in these fields, but little increase occurs unless an active policy of solicitation is followed. The board would welcome an opinion from the Council and the membership on the wisdom of curtailing manuscript solicitation until the backlog of unpublished material can be substantially reduced.

The members will be interested in where we stand today. We began the 13-month period since my last report with 102 manuscripts on hand. We published 102 manuscripts, or exactly the number we had on hand at the beginning of the year. We now have on hand 83 manuscripts either ready for the printer or in the process of review, and 21 that are being revised by the authors. This totals 104, 2 more than the number with which we started. The increase in unpublished material has virtually stopped. In addition to manuscripts, we published 13 editorials, 56 fillers, 54 notes, 12 We Present sketches, 27 items under Points of View, and 79 reviews during the 13-month period.

Some question has arisen as to editorials. In these, I have tried to follow the policy of the Society and Council where established. Addi-

tional viewpoints that I thought might prove stimulating to members have been expressed. Where members have expressed their disagreement with editorials I have urged them to prepare a counter statement for the Points of View section. Those who have done this have, I believe, done the Society a considerable service in keeping the JOURNAL lively, readable, and expressive of member opinion.

It is only fair to the membership that I point out some of the handicaps of an unpaid editor. Manuscripts are received by the editor-in-chief at the rate of about 26 a month, or one for each working day. All full-sized manuscripts are sent to associate editors for review. The shorter ones are processed directly by the editor. Editing manuscripts, corresponding with associate editors, and with authors, scheduling material for publication, preparing editorials, and the multitude of other tasks that fall to the lot of the editor require about 40 hours of my time for each issue. It requires the same amount of time of my secretary, who prepares a card record for each manuscript, transcribes dictation, proofreads manuscripts, prepares material for reports, and files all records. Editor's duties have taken so much time that I have had limited time for constructive effort toward improving the JOURNAL.

The many compliments I have received on the fine quality of the JOURNAL during the past year belong chiefly to authors and associate editors. The editor at best is only their agent. Authors have been extremely patient and considerate in revising manuscripts to meet suggestions raised by the associate editors and editor. The Editorial Board has continued to render scholarly, devoted effort to the Society's JOURNAL. They have, without exception, done their best on every manuscript and where they felt they needed advice from others, have freely sought it before making recommendations to the Editor. They merit the appreciation of every JOURNAL reader.

Report of the Executive Secretary

Henry Clepper

IN DECEMBER 1938 the Society had a membership of 4,340 and a staff of 8 permanent employees. As of December 1948, the membership totals 6,176 and the staff numbers 9 (Table 1).

During the past fiscal year the Society had its greatest growth of the past decade, a net gain of 555 members. Moreover, the net gain in Junior Members advanced to full Member grade (formerly Senior Membership) was 395.

It is exceedingly difficult to obtain accurate figures on the number of professional foresters actually employed in forestry and in closely allied fields. In fact, it is exceedingly difficult to determine exactly what is forestry work. Because the base of forestry is broadening so rapidly from year to year we can no longer permit our concept of forestry to be restricted to those specializations and disciplines which we formerly accepted as defining forestry work. My belief is that some 12,500 foresters are now actually employed in forestry and allied fields. Assuming for the moment, in the absence of more accurate information, that 12,500 is an acceptable if not a strictly precise figure of the number of practicing foresters, we arrive at the startling conclusion that every member of the Society is carrying not only his own load—professionally speaking—but also the load of some free-riding, absentee brother. Organized as it is for the advancement of the whole profession of forestry,

TABLE 1.—MEMBERSHIP BY GRADES (As of November 30)

Grade	1941	1942	1943	1944	1945	1946	1947	1948
Fellows	27	36	36	38	37	43	43	51
Seniors	1,651	1,715	1,723	1,834	1,891	2,037	2,304	2,699
Juniors	2,748	2,514	2,319	2,198	2,151	2,648	2,954	3,058
Associate	106	105	109	115	135	149	174	186
Affiliate	141	125	115	113	125	145	167	186
Honorary	10	10	10	11	10	9	10	12
Corresponding	28	29	32	33	33	34	38	49
Inactive	47	129	298	354	346	165	12	16
Total	4,758	4,663	4,642	4,696	4,728	5,230	5,702	6,257

TABLE 2.—SOCIETY MEMBERSHIP CLASSIFIED BY STATES AS OF DECEMBER 1, 1948

State	Fellows	Members[1]	Juniors	Associates	Affiliates	Total
Alabama	—	47	60	5	4	116
Arizona	1	26	33	—	1	61
Arkansas	1	38	49	2	14	104
California	4	256	292	18	23	593
Colorado	1	70	97	3	4	175
Connecticut	4	50	33	5	5	97
Delaware	—	5	1	—	—	6
District of Columbia	9	85	21	18	—	133
Florida	2	42	68	5	7	124
Georgia	—	85	117	7	13	222
Idaho	1	62	79	1	2	145
Illinois	—	30	51	1	—	82
Indiana	—	27	32	—	—	59
Iowa	1	11	25	—	—	37
Kansas	—	5	4	—	—	9
Kentucky	—	17	13	1	1	32
Louisiana	1	73	73	4	1	152
Maine	—	47	48	2	1	98
Maryland	4	42	24	7	—	77
Massachusetts	1	35	31	5	5	77
Michigan	2	68	125	2	5	202
Minnesota	3	74	102	5	12	196
Mississippi	—	54	39	5	5	103
Missouri	—	28	21	—	—	49
Montana	1	67	85	3	—	156
Nebraska	—	12	5	1	—	18
Nevada	—	7	11	—	—	18
New Hampshire	1	41	29	3	6	80
New Jersey	—	25	30	1	—	56
New Mexico	—	44	31	2	1	78
New York	3	142	143	9	6	303
North Carolina	2	88	86	3	6	185
North Dakota	—	6	8	2	—	16
Ohio	—	40	45	7	1	93
Oklahoma	—	11	8	1	1	21
Oregon	4	180	251	11	19	465
Pennsylvania	1	131	101	7	1	241
Rhode Island	—	3	2	—	—	5
South Carolina	—	47	82	3	4	136
South Dakota	—	19	13	—	1	33
Tennessee	—	65	39	6	3	113
Texas	1	38	51	2	4	96
Utah	—	51	40	1	—	92
Vermont	—	20	18	—	1	39
Virginia	1	59	66	2	1	129
Washington	2	103	229	8	14	356
West Virginia	—	29	38	6	7	80
Wisconsin	—	87	90	11	3	191
Wyoming	—	20	24	—	2	46
U. S. Possessions	—	18	17	—	2	37
Canada	—	35	55	—	—	90
Foreign	—	14	14	1	—	29
APO	—	7	9	—	—	16
Inactive	—	3	13	—	—	16
Dues remitted	—	13	—	—	—	13
Total	51	2,702	3,071	186	186	6,196
Honorary	—	—	—	—	—	12
Corresponding	—	—	—	—	—	49
Grand total	—	—	—	—	—	6,257

[1]Formerly known as Senior Members.

TABLE 3.—MEMBERSHIP, INCOME, EXPENSE, AND STAFF

Year	Membership	Income	Expense	Net earnings	Staff
	Number	*Dollars*	*Dollars*	*Dollars*	*Number*
1939	4,559	37,347	35,285	2,061	7
1940	4,732	37,526	34,416	3,109	7
1941	4,758	38,288	37,193	1,094	7
1942	4,663	36,275	33,657	2,617	7
1943	4,642	34,889	25,478	9,411	5
1944	4,696	37,815	36,400	1,415	6
1945	4,728	43,599	36,007	7,591	8
1946	5,230	50,350	52,272	—1,922	8
1947	5,702	56,705	59,252	—2,546	8
1948	6,257	67,677	72,712	—5,035	9

TABLE 4.—COMPARATIVE INCOME AND EXPENSE

	1943	1944	1945	1946	1947	1948
				Income		
				Dollars		
Dues	27,756.24	28,525.91	34,992.88	39,704.30	44,345.51	50,869.97
Fees	1,773.75	2,158.53	1,075.00	2,439.40	3,204.70	3,384.75
Journal subscriptions and sales	3,410.80	3,496.83	4,401.11	4,377.07	5,977.45	7,342.08
Advertising	925.59	873.86	922.73	836.89	1,335.87	2,565.69
Interest and dividends	417.50	587.21	618.71	650.16	570.27	545.47
Contributions	218.00	156.00	5.00			14.00
Reprints	46.64	22.05	50.36	—44.72	102.82	330.11
Miscellaneous income	331.98	370.41	249.00	516.08	480.01	739.41
Discounts earned	9.23	4.18	8.23			20.74
Forestry Terminology		1,620.66	555.71	1,223.81		
Books			299.85	287.01	440.91	786.17
Forest Cover Types (Western)			55.67	70.93	7.47	
Handbook of Information			364.94	289.63	240.86	106.25
Proceedings—sales and contributions						972.55
Total	34,889.73	37,815.64	43,599.19	50,350.56	56,705.87	67,677.19
				Expense		
Journal of Forestry	10,102.54	10,598.28	10,929.51	13,979.81	15,669.26	18,014.65
Editors expense	87.09	50.00	72.31	487.23	441.25	420.24
Salary—Executive Secretary & Asst.		5,500.00	6,511.04	10,600.00	11,085.02	10,650.00
Salary—Office staff	10,080.00	11,241.46	11,370.02	13,873.73	16,585.91	18,449.41
Travel	518.12	1,532.42	1,777.48	2,939.85	2,761.83	3,099.62
Postage	603.77	762.59	822.43	1,075.32	1,256.20	1,162.45
Rent	1,380.00	1,425.00	1,440.00	1,440.00	1,440.00	1,440.00
Telephone and telegraph	192.94	237.72	265.89	336.29	336.01	331.24
Addressograph	62.24					
Multigraph and mimeograph	67.78	31.30	70.35	153.40	305.30	240.65
Miscellaneous printing	145.50	208.58	462.11	353.50	575.64	608.75
Office supplies	164.21	287.29	324.87	259.57	416.65	549.12
General expense	459.78	641.42	589.65	790.51	763.25	895.14
Depreciation	243.22	301.08	293.95	262.08	386.19	394.78
Pension plan	244.54	344.88	354.00	354.00	354.00	724.93
Bad debts			9.31			
Election of officers		195.54		213.89		464.73
Contributions	50.00	200.00	50.00	50.00	50.00	50.00
Publicity	15.98	5.40				
Committee expense	22.12	97.36	369.08	35.39	94.48	72.85
Annual meeting				447.85		445.97
Grading forestry schools	55.40	64.85	44.49	185.94	100.00	92.91
Committee on War Manpower	86.18					
Council travel expense	896.77	938.75		1,353.44	903.09	1,233.07
Forestry Terminology		1,620.66				
Constitution and bylaws			226.00			
Journal of Forestry prize			25.00		100.00	100.00
Referenda		115.74				403.51
Bonus, office force		300.00				
Natural Resources Council					200.00	200.00
Forestry News				2,630.96	4,952.53	3,903.88
Secretarial expense, president				410.05	262.71	
Contingent fund				39.30	218.39	
War devastated libraries				.83		18.50
Division expense						44.55
Amer. Inst. Biol. Sciences						100.00
Proceedings						8,257.21
Council actions taken						248.95
Membership certificates						65.58
Schlich award						30.00
Total	25,478.18	36,700.32	36,007.49	52,272.94	59,252.71	72,712.69

the Society benefits impartially those who support it as well as those who do not. Doubtless thus it has been since the world began; those with a sense of professional pride and solidarity have always shouldered the burdens of advancement, while on the sidelines, ever alert to profit personally from the exertions of the faithful, but contributing as little, or nothing, as their atrophied social consciousness dictates, stand the on-lookers, the camp followers, of the army of progress, wailing, "What's in it for me?"

Table 2 shows our membership classified by states.

As a footnote to my comments on membership, I think you will be interested to know the ten states with the largest number of Society members are California, Oregon, Washington, New York, Pennsylvania, Georgia, Michigan, Minnesota, Wisconsin, and North Carolina.

Finances

During the fiscal year 1948, the Society took in $67,677, and expended $72,712. To put it bluntly, we operated in the red to the extent of $5,035.

Table 3 shows our income and expenditures for the past ten years. As will be seen from these figures, the Society operated in the red during the past three years. However, our financial outlook is not as ominous as these figures indicate. As a matter of fact, our net earnings over a period of years, as reflected in our invested funds—General Fund, $17,236; Permanent Fund, $5,213—total $22,449.

The deficits of the past three years were deliberately incurred by the Council in order to carry on essential activities for the advancement of the profession. With the increase of dues recently voted by the membership, deficit budgeting should become a thing of the past. I am glad to inform you that no deficit is contemplated for the fiscal year 1949. We may not be able to do all the things we should do during the coming year, but at least what we do will not be done in the red.

For further details of our financial condition, refer to Table 4.

Assistant Executive Secretary

Last May Robert D. Hostetter, a forestry graduate of Colorado A & M college and of Duke University, employed by The Tennessee Valley Authority in Alabama, joined the staff of the Society as assistant executive secretary.

His duties are principally concerned with rendering employment service to members, compiling *Forestry News*, responding to requests for technical service and information, and otherwise assisting the executive secretary in performing work authorized by the Council. Among other projects currently undertaken by him are a revised list of consulting foresters to be published in the JOURNAL, and a manual or handbook for the guidance of Section officers now in preparation.

Journal of Forestry

Dr. Shirley, our editor-in-chief, has reported on the editorial aspects of the JOURNAL OF FORESTRY. I commend to your consideration his suggestion about a fulltime, paid editor for the Society.

It is significant, I think, that the budget for the JOURNAL has doubled since 1945. For the decade prior to 1945, the annual expense of the JOURNAL averaged between $10,000 and $11,000. The budget for next year is $23,600. Recent increases in printing costs, mostly for composition and to a less extent for paper, have necessitated postponing certain desirable improvements such as materially increasing the number of pages, using a high grade smooth paper, and printing more illustrations. However, the JOURNAL has undergone a "face lifting" and beginning with the January issue will have a "new look" which we hope our readers will like.

Many members and several Sections have urged that increased advertising be obtained for the JOURNAL in order to provide more revenue. Without question, the JOURNAL should publish more advertising, and revenue from this source should be raised. However, without adequate staff to carry on an advertising solicitation campaign, income from advertising is confined to what can be obtained by mail correspondence. Despite this handicap, advertising income for 1948, estimated in the budget at $1,200, actually amounted to $2,600.

Our national office will continue to develop advertising revenue, but no appreciable increase can be expected with the present shortage of personnel.

Report of the Committee on Civil Service

The work of the Committee on Civil Service can be briefly stated. It has consisted of an effort to summarize the opinions and comments of the schools in regard to the Junior Forester examination as it is currently being given.

To that end the executive of each of the twenty-two accredited schools was asked for a statement representing the attitude of his school in this matter. It is understood that these expressions represent hardly more than a show of hands, pending the outcome of comprehensive studies by the Forest Service and by the Civil Service Commission. We consider that no school executive has made any commitments in his statements. It is hoped, however, that a summary of the replies may be helpful in formulating a recommendation regarding the important matter of our junior professional examination.

Following, then, is a summary of the replies received:

Schools favoring unreservedly the current type of examination, 0

Favoring return to the earlier type of examination which was a subject matter test supplemented by a general intelligence test, 16

Favoring the current type of examination, (one school prefers that it be definitely an aptitude test), plus certification of some sort —that the applicant is a graduate of a technical curriculum in an accredited school— or by faculty opinion as to the applicant's qualifications for a career in forestry, 3

No specific preference expressed, or deferred pending further study, 3

Four schools report that most of their men go into industry or state service, consequently few plan to take the Junior Forester examination. In this connection, the committee suggests that the fact that a man has passed the junior professional examination, while not a determining factor, may be a good item on his record.

Three schools indicate as student opinion that the current type of examination is a letdown after intensive technical training.

Three schools remind us that even academic attainment is no indication of the personal qualifications needed for a successful career in forestry—ability in the field, in administration, or in research.

Two schools emphasize that the current type of examination is advantageous since the schools can spend their time educating the student rather than coaching him for a Civil Service examination.

One school notes that the current type of examination is advantageous to the applicant who has been out of college for some time since there is no need for special coaching.

Two schools feel that if possible the examination should be followed by personal interviews by a member of the Forest Service.

The chairman has conferred in Washington with officials of the Forest Service and is appreciative of the fact that these men view the problem in about the same light as do the schools. At present they feel that the weight of evidence seems to indicate that the type of examination which combines a subject matter test with a general test, produces the best results.

The officials of the Civil Service Commission give assurance that there is no prejudice against this type of examination, but that the current type of psychometric test is resorted to because of lack of adequate personnel in the face of an overwhelming examining task. They give no intimation as when this situation is likely to change.

The committee recommends that the Society urge the return to the subject matter test, supplemented by a general test, measuring general intelligence, aptitudes, and interests.

D. J. WEDDELL,
W. C. PERCIVAL,
E. R. MARTELL,
D. S. JEFFERS,
V. A. BEEDE, *Chairman.*

Report of the Committee on History of Forestry

Last year your committee chairman reported that the Society's "History," planned for publication on the 50th anniversary of the Society in 1950, is to be subdivded into three main parts.

I. Summary.

II. Eight chapters pointing out the developments in the principal technical fields of forestry.

III. Twelve chapters tracing the history of the principal agencies responsible for the advances in the principal technical fields.

Each chapter is being prepared by a specialist in his field. The "History" is planned as a

volume of 200 to 300 pages, so written that it will have meaning for the nontechnical as well as the technical reader. All chapters have been assigned to authors, chapter outlines have been agreed to, and eight out of the 21 chapter manuscripts have been received. Correlation of the subject matter of the various chapters is moving forward.

Last night (December 15) plans for publishing the "History" were discussed with the Council. The following points were agreed to in principle:

1. The "History" should be published by the Society.
2. It should be made as attractive as possible by means of good quality paper, well chosen illustrations, and distinctive type and binding.
3. The manuscript must be in the hands of the publisher by September 1, 1949 in order that advance copies can be available for reviewers by September 1, 1950.
4. The "History" will be released for public sale for the 50th annual meeting of the Society to be held in Washington, D. C. late in 1950.

HUGH P. BAKER,
E. H. FROTHINGHAM,
WM. L. HALL,
RALPH S. HOSMER,
S. BLAIR HUTCHISON,
L. F. KELLOGG,
J. P. KINNEY,
ROBERT K. WINTERS, *Chairman*.

Report of the Committee on Canons of Ethics

Since the submission of the report of your committee published in the JOURNAL of August, 1948, at page 625, *et seq.*, the proposed canons of ethics as modified by the action of the Council has been submitted for ballot to our membership. We have been informed that such ballot reflects the acceptance of the canons by the membership.

Certain recommendations of your committee made in the report aforesaid await action.

We have learned that at the request of Dean Illick, of the New York State College of Forestry, a two-hour lecture and discussion on the canons of ethics for the profession of forestry was delivered on October 30, 1948. Your committee would appreciate from Dr. Illick some expression of his opinion of the value of this lecture, purely from the student's viewpoint.

We understand that at the George Foster Peabody School of Forestry, University of Georgia, lectures on ethics have also been presented. We would also appreciate a similar opinion from that learned institution.

We think perhaps reprints of the canons of ethics as adopted, may well be made available to the several forestry schools and colleges.

During the balloting on the proposed canons of ethics, Professor Archie E. Patterson of the University of Georgia and your committee were engaged in correspondence on the structure and meaning of Canons 4, 9, and 16. This correspondence is still in progress, copies being in the hands of the executive secretary.

Your committee feels that its assignment is concluded and respectfully asks for a determination of what its future should be.

H. H. CHAPMAN,
HENRY CLEPPER,
CHARLES F. EVANS,
STUART MOIR,
JULIUS KAHN, *Chairman*

Report of Committee on International Relations

During 1948 your committee participated in a number of international conferences and helped in the preparatory work for conferences to be held during the coming year. It has continued to collect information regarding regional and international forestry organizations, especially regarding their purposes, background, and personnel. Your committee is in a better position each year to assist members planning foreign travel for professional purposes by making available information on such organizations and the names of foresters and forestry officials.

Within the past year your committee has recommended six foreign foresters for Corresponding Membership and one foreign forester (Professor E. P. Stebbing) for Honorary Membership. It has continued to help destitute foreign foresters with gifts of food and clothing, bought partially from the foreign relief fund established in 1947 by contributions from our members. A screening mechanism has been set up in Europe to safeguard these gifts and to

see that they fall within the groups for whom help is intended. As a general policy preference is being given to requests of foresters west of the Iron Curtain.

Participation in Conferences in 1948

1. *Conservation Conference on Micronesia.*—This was held under the auspices of the Pacific Science Board, in Washington, D. C., May, 1948. The Pacific Science Board is cooperating with the Navy Department in working out problems involved in the administration of the trust territory of the Pacific Islands, particularly in the field of the natural sciences. At this meeting plans were formulated for a program of conservation of the renewable natural resources of the Micronesian Islands.

2. *Inter-American Conference on Conservation of Renewable Natural Resources.*—This meeting was an official inter-American conference held in Denver, September 7-20, 1948, and was sponsored by the United States government at the request of the governing board of the Pan American Union. It was the first international meeting of its kind to be held on conservation and invitations were extended to the 20 member governments of the Pan American Union. An important feature was a series of field trips: to soil conservation projects, national forests, and other places of interest in the vicinity of Denver. More than 300 attended this meeting and many members of our Society participated.

3. *Fourth Annual Conference of the Food and Agriculture Organization of the United Nations.*—At this conference held in Washington, D. C., November 15, 1948, Chief Forester Lyle Watts and your chairman acted as the forestry advisors to the U. S. delegation. From the forestry standpoint probably the most important result of the conference was a decision to hold a meeting of technical experts and land administrators during 1949 to attack the problem of shifting (conuco) agriculture.

Participation in Conferences in 1949

1. *Third World Forestry Congress.*—By far the most important forestry event scheduled for the coming year is the Third World Forestry Congress sponsored by FAO to be held in Helsinki, Finland in July. The committee has already prepared two notes for the JOURNAL informing our membership of this conference. These notes appeared in the August and December issues of the present year. Your committee is now seeking to promote forest excursions following this conference in several of the important forest regions of Europe. A subcommittee has recently been appointed under the chairmanship of Chief Forester Watts to act on applications of United States foresters for membership to this congress.

It has been twelve years since the last world forest congress was held in Budapest and the need for such a meeting has long been felt by foresters throughout the world. Problems of especial interest in the field of forestry and forest products will be discussed, and it is expected that at this conference a suggestion will be made for establishing a world society of foresters—a proposed nongovernmental organization functioning on parallel levels with the international society of physicists and other professional bodies.

2. *United Nations Scientific Conference on the Conservation and Utilization of Resources.*—This conference is still in its formative stages, and although an agenda and program have been created, the time and place remain undetermined.

Forestry and forest products will be major subjects, and an approximate period of four days is set aside for forestry discussion. Wildlife, water, and soil conservation will also be discussed. Originally the date was set for May or June, 1949, but the probabilities now are that it will be held later and there is danger that the date of this conference may conflict with that of the Third World Forestry Congress. Your committee has called this to the attention of the planners of the conference and expressed the hope that a date will be established not in conflict with any other forestry conference. As soon as plans for this conference are more definite, a note will be placed in the JOURNAL.

3. *Seventh Pacific Science Congress.*—This congress has been called for February 2-22, 1949 in Auckland and Christchurch, New Zealand. Forty-eight countries have been invited to participate. This meeting will devote one complete session to a symposium on major forest problems in the Pacific. Another symposium will cover improvement of food and forest crops.

The forestry program is being organized by the New Zealand Institute of Foresters, which has also arranged a number of excursions to forest plantations and soil and other research sta-

tions. H. H. Chapman, professor emeritus of Yale University, has been appointed chairman of the forestry committee of the congress and a delegate of our Society. Your chairman is secretary of the forestry committee.

Miscellaneous

1. *International Institute of the Hylean Amazon.*—At the first session of the general conference of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) steps were taken in consultation with the Brazilian government to set up an international institute for the Hylean Amazon area to study problems of botany, zoology, agriculture, social sciences, and education. This area covers about four and one-half million square miles of tropical forests in the Amazon basin and makes up nearly one-third of the total area of South America, and probably includes the greatest untapped reservoir of tropical timber in the world today. A start has now been made on the project and a small staff chosen. Yet paradoxically, in a region where human welfare depends so intimately on the forests, no forester has been chosen to work on the project. Your committee is now actively interesting itself to the end that one or more technical foresters be chosen and appointed.

2. *Publications and Reports Received in 1948. Conservation in Micronesia* (Report on two conferences held under the auspices of the Pacific Science Board in Honolulu, T. H., and Washington, D. C., in April and May 1948). National Research Council, Washington 25, D. C.

Documents of UNESCO concerning establishment of International Institute of the Hylean Amazon.

Documents of Inter-American Conservation Conference, Denver, Colo., September 1948.

Documents of Fourth Annual Conference, United Nations Food and Agriculture Organization, Washington, D. C., November 1948.

Information releases regarding Pacific Science Congress, to be held in New Zealand, February 1949.

I. T. HAIG,
LE ROY HUNTINGTON,
BARRINGTON MOORE,
LYALL E. PETERSON,
J. W. B. SISAM,
W. N. SPARHAWK,
J. H. STOECKELER,
HENRY TRYON,
TOM GILL, *Chairman.*

Report of the Committee on Library of Congress Photographic Collection

The Library of Congress foresters' photographic collection (we have given it the name "Pinchot Collection"), is coming along slowly—much too slowly. There are now about 700 photographs of foresters in the files, each in a separate envelope with a separate biographical card for reference. The excellent and systematic handling of these photographs should be credited to Dr. T. S. Palmer whose interest, enthusiasm, and work are greatly appreciated.

I would like to emphasize and stress again the historical importance of this project, from the standpoint of the record of what foresters have done, who the individuals were, and what they look like.

Most foresters are too interested and immersed in their work to give thought as to how future generations may evaluate them and their accomplishments. I daresay, however, that later on many will be mentioned in the histories of the profession, and the committee, with its continual request for photographs, is only trying to provide the material that will permit the historians to do a complete job.

All foresters who have not already done so are urged to send in their photographs together with biographical data.

I sincerely thank the sectional committees for their continued efforts and Dr. Palmer for his valuable guidance.

HELMUTH BAY, *Chairman.*

Report of the Committee on Accrediting Schools of Forestry

At the 1947 annual meeting of the Society your committee was charged with reaccrediting schools of forestry in the period 1950-1951. Of necessity most of the work of the committee has consisted of planning for this task. The detailed activities of the committee follow:

Two schools, that at the University of Massachusetts and that at the University of Missouri, applied for "listed" status. After thorough study of the supporting data, the committee approved the requests, unanimously. These reports of the Committee were supported by subsequent approval by the Council.

In July, 1948, the committee adopted the following plan of procedure:

1. The chairman, on behalf of the committee, will send a request to the heads of all schools of forestry for suggestions as to desirable revisions in the standards for grading as expressed in "Bases for Accrediting Professional Schools of Forestry," H. H. Chapman, January 1947.

2. Detailed study by the committee of present standards for grading and desirable changes in basic elements, weighing, and methods of calculation. (See "Bases for Accrediting Professional Schools of Forestry," H. H. Chapman, January 1947.)

3. Study by the committee of comments received from the heads of school under *1*.

4. Vote by the committee on desirable revision based on *2* and *3*, and perhaps additionally on a "dry run" of the schools represented by the members of the committee.

5. Resubmission of the proposed standards and methods of evaluation to the heads of the schools if, in the opinion of the members of the committee, this seems necessary.

6. Final revision of "Standards for Grading." (This is to be completed and incorporated in our report to the annual meeting of 1949.)

Replies as to the bases used for accrediting have been received from sixteen schools. Some dissatisfaction has been expressed concerning all the items used by the Committee on Accrediting in former years. It is evident that all criticisms are founded on a thoughtful, logical attempt at improvement. The most serious criticisms concern the items of "Departmental Status," "Faculty and Teaching Load," "Personnel of Teaching Force," and "Equipment."

This report seems not quite the appropriate place for a listing of specific criticisms. It should be pointed out, however, that the comments from those schools presenting the most detailed criticisms follow two general themes: (1) the system used must not penalize the small but effective schools, and (2) means must be found to stress to a greater extent the qualitative elements in accrediting.

The heads of four schools made a plea for accrediting by curricula. If adopted by the Society this would change rather radically the bases heretofore used for accrediting. The committee believes that underlying this whole question is the basic nature of forestry. The Society must decide whether forestry is "wild-land management" or whether it is "the management of land for the production of nonhorticultural tree crops." For the past decade the Society has been trying to maintain the spirit of the first definition, but has been accrediting schools largely on the basis of the second definition.

Recommendations

The Committee on Accrediting Schools of Forestry urgently recommends that the Council take immediate action on the two following items.

1. Definite statement of the objectives of the Society to be used as the overall basis for accrediting schools of forestry or curricula.

2. Authorize the expenditure by the Committee on Accrediting of $2500 during the biennium 1950-1951. Of this amount not less than $2000 should be earmarked for the specific use of visiting committees in order that accrediting may receive a more qualitative emphasis.

J. LEE DEEN,
PAUL A. HERBERT,
WALTER H. MEYER,
ROY B. THOMSON,
MYRON KRUEGER, *Chairman.*

Report of the Committee on Community Forests

The community forest movement, more or less latent during the war, has been developing new impetus within the past two or three years. The number of community forests reported this year has increased 25 percent and the area has increased about 37½ percent over the statistics reported a year ago. Wherever they have been put under active management and their resources developed for public use, they have demonstrated that they render service of high value to the communities both in a social way as well as economically. Community forests, therefore, justify a prominent place in the forestry movement.

The presence of a public forest in a community is an indication of a progressive citizenship, alert and resourceful in making it a good place in which to live. Under the definition adopted by the Society of American Foresters, community forests include forests operated by cities, towns, townships, villages, school districts, counties, or other political subdivisions of the state together with forest areas owned and operated by public welfare agencies and associations. By this grouping the forestry program of the country falls

into four classes of ownerships: (1) private forests; (2) national forests; (3) state forests; and (4) community forests.

The latter now number more than 3,100 and cover approximately 4½ million acres. County and township forests together, to the number of 617, have more than one-half of the total area of all community forests. Municipal forests account for 1,121 properties of which one-fourth are watershed protection forests. School forests number 1,279 units and organization forests 96.

The growth of county forests is largely the result of land use planning. The largest county forests are in those states which have had to deal with the problem of large-scale tax delinquency. The old method of handling abandoned lands by reselling them after they became tax delinquent has proven uneconomic and unsatisfactory. The history of repeated tax reversion of such lands indicates clearly that the disposal of land by tax deed offers no permanent solution to the problem. On the other hand, land use planning has indicated the wisdom of holding such land in public ownership for rehabilitation.

Many states now have laws which permit counties to take title to the reverted lands and put them under management as county forests. New York, Wisconsin, Michigan, Minnesota, Georgia, and Oregon lead in the development of this type of county forests. In a number of other states, county forests have been acquired through the purchase of land chiefly for recreational use. These county forests take on the aspects of municipal forests. An outstanding example is Illinois where ten counties have acquired acreages up to 35,000 to be developed principally for recreation and educational use.

Of the 1,121 village and city forests 319 are maintained principally for watershed protection. Municipal forests usually put greater emphasis upon recreational use, but they also include examples of the most intensive silvicultural practices.

Public school forests represent the fastest growing category of community forests. These are used primarily as outdoor laboratories for teaching conservation and the natural sciences and they are exerting a strong influence upon educational standards. They are small in area but rich in opportunities for public benefits.

Organization forests are growing in number with the tendency to place the benefits of outdoor recreation within reach of youth groups and under privileged citizens. These forests, while ordinarily not publicly owned, are nevertheless devoted to public use and benefit.

The effect which community forests are having upon the standard of living in America justifies a strong movement for the enlargement of this program throughout the country. The Society of American Foresters should urge upon members of the profession the desirability of promoting a nation-wide community forest program coordinated with national and state forests. The ultimate objective of relieving tax burdens on communities, as has been so notably true in Europe, should be emphasized in the development of this rather new phase of our public forest ownership program.

Recommendations

Your committee recognizes that the Society of American Foresters is not financially in a position adequately to conduct such a campaign alone. Educational work necessary to stimulate local action should be a part of the program of every agency engaged in forestry. We therefore respectfully submit the following recommendations, under three main divisions:

I. *U. S. Forest Service and state foresters.*—The splendid work that has been done by the Forest Service in the collection and dissemination of information should be enlarged by giving community forestry the status of a division or special office with adequate funds. Foresters in all the federal services, and especially those who come in contact with local officials and agencies, should be instructed to emphasize at every opportunity the benefits to be derived from community forests.

The state forester, as has been done in some instances, should make the establishment and management of community forests one of the principal projects in his program. His first step should be to obtain a law by which communities are authorized to own and operate such forests where this has not already been done. Working through his district and local foresters he should then collect information as to the possibilities of such forests in his state and disseminate that information in public addresses, press, and special bulletins. The main weakness in the community forest movement at present is the lack of proper management after a forest has been established. Such management should be a function of the state forester as it is in Europe, and provision for such management should be incorporated in the community forest law. There is no activity

of a state forester that will bring more public support for his work or do more to make the people forest minded than well managed community forests.

II. *Forestry associations.* — The American Forestry Association and the various state associations have played a conspicuous part in the community forest movement. Each organization has done good work in its own region but there has never been a concerted drive to bring the importance of this subject before the country. Since the work of these associations is largely educational, the creation of school forests as outdoor laboratories offers an exceptional opportunity for the extension of their conservation activities. It is recommended that the Society of American Foresters formally request the American Forestry Association to initiate the consolidation of the efforts of state forestry associations and other conservation groups for the creation of community forests, and especially to interest the educational authorities in this phase of conservation.

Another function of the community forest which has a special public appeal at this time is its use as a war memorial. A memorial in the form of a forest is most enduring because it is self-supporting and self-perpetuating. Many forest memorials were established after World War I and there is a wide interest in the subject at this time. If the forestry associations were to conduct a nation-wide campaign for such forests now, they would have the support of veterans' organizations, women's and garden clubs, service clubs, and other civic groups.

It is suggested that a special bulletin, setting forth the benefits to be obtained from community forests, and illustrated with the best existing examples, be prepared. This bulletin should be published by one agency so that cooperating organizations would be able to obtain sufficient copies at a fraction of the cost of preparation and printing if done separately. The plan would be to place this bulletin in the hands of all of the town and city authorities as well as all organizations interested in conservation throughout the United States. The distribution of the bulletin would naturally be supplemented with newspaper, magazine, and radio publicity.

III. *The Society of American Foresters.*— It is recommended that the Society itself take an active part in this campaign by devoting more space in the JOURNAL to the subject of community forests. The articles should bring to the attention of the membership the ways in which as individuals they can be influential in the establishment of such forests in their own communities and their professional responsibilities for assuming leadership in the movement. There is no better way to arouse the interest of the average citizen in the conservation of the forest resources than to bring their benefits within his easy grasp. This has been proved by the experience of Europe. Here is a noncontroversial movement in which every forester can play an active part.

It is further recommended that all of the Sections of the Society be urged to set up special committees on community forests to assist the state foresters and to give technical guidance to interested citizens and organizations.

NELSON C. BROWN,
GEORGE A. DUTHIE,
CHAS. G. GELTZ,
E. V. JOTTER,
G. S. MCINTIRE,
PAUL W. SCHOEN,
WILLIAM SYLVESTER,
HARRIS A. REYNOLDS, *Chairman.*

(Since preparation of this report, O. Ben Gipple of Pennsylvania has been appointed a member of the committee.

Report of the Joint Committee on Equipment with the American Society of Mechanical Engineers

With my appointment as co-chairman representing the Society of American Foresters on this joint committee, it became necessary to start fresh so far as my office was concerned because of the disruption and lost continuity that resulted from the death of David Godwin who had been my predecessor.

Fortunately, R. B. Sargent, chairman for the A.S.M.E. group, has continued actively to carry forward the plans that had been developed at the meeting held during 1947 at Madison, Wis., and he saw to it that the interval was not lost time. To our regret, he has sought for some time to resign as chairman of the A.S.M.E. group but was persuaded to remain until a suitable successor could be found. Recently I. C. Funk, formerly in charge of the fire equipment development laboratory at Arcadia, Calif., and now assigned to fire equipment development in the

Division of Fire Control of the Forest Service in Washington, D. C., has been selected by A.S.M.E. as Mr. Sargent's successor with the unanimous approval of members of both committees.

Because of Mr. Sargent's initiative and interest, it has been possible to keep all members of the joint committee in touch with the new possibilities in equipment development of the classes agreed on for investigation. These were concerned primarily with improvement in lightweight pump equipment, in the prospect of developing lighter hose in the 1½" class and the determination of the needed types and specifications of tractor equipment for fire fighting.

In addition, during the year it was decided to include investigation of wetting agents as a matter of mutual interest for all fire control agencies. The objective was to determine how much value they might have for forest fire purposes and if found significant to promote the development of specifications that would permit easy purchase and use of the best chemical compounds for the purpose.

After a good many delays in arranging for a meeting of the group, a meeting was finally called on October 4 and 5, 1948, at Akron, Ohio. Mr. Sargent has generously undertaken the preparation of a joint report covering this meeting. I should like to present this report as a record of the activities, plans, and accomplishments so far of this joint committee. The report follows.

Report to the Wood Industries Division on the Second Meeting of the A.S.M.E.-S.A.F. Joint Committee on Forest Protection Equipment at Akron, Ohio, October 4th and 5th, 1948.

Meeting attended by: A. A. Brown, chairman, S.A.F. chief, Division of Fire Research, U. S. Forest Service; Ira C. Funk, chief, Fire Equipment Section, Division of Fire Control, U. S. Forest Service; Gilbert I. Stewart, in charge, Michigan Forest Fire Experiment Station, Roscommon, Michigan; Charles S. Cowan, chief fire warden, Washington Forest Fire Association; Hugh N. McNair, Carbide & Carbon Chemicals Corporation; J. M. Flounders, The B. F. Goodrich Company; R. B. Sargent, chairman, A.S.M.E., Hale Fire Pump Company.

Absent members: Horatio Bond, chief engineer, National Fire Protection Association; William Kusz, Caterpillar Tractor Company.

Wetting Agents

1. Report on wetting agents by Hugh McNair. Mr. McNair's formal report as accepted by the committee is attached for the record. Briefly, Mr. McNair reported:

A. Successful use of wetting agents on Eastern Seaboard fires justifies research to determine most efficient concentration and best technique of application.

B. Successful use of wetting agents, preferably called "surface active agents" has resulted in investigation and tests by the University of California at Los Angeles and field tests by various divisions of the national and state forestry groups. University of California investigations are sponsored by the Forest Service. Tangible, and perhaps definite, results are expected within 12 months.

C. Forest Protection Committee wetting agents division is in constant touch with all independent and commercial research as well as field tests. This division will be able to coordinate the results and give a comprehensive report as soon as more and definite information is available.

D. Information up to the present time indicates surface active agents are much more efficient than plain water on ground and subsurface fires likewise for mop-up in duffs, stumps, and fallen timber. For further reference see "The Use of Wetting Agents in Forest Fire Suppression" by Clarence E. Edson of the Rhode Island Division of Forests and Parks and William W. Parker, formerly of Fire Specialties Division, The Arnold Hoffman Company, published in the August 1947 issue of *Fire Engineering*.

E. Surface active water attacks the zinc of galvanized tanks. Efforts are now being made to have manufacturers of back pack tanks coat the inside of tanks with an asphalt or other paint not attached by wet water chemicals.

An informal discussion then brought out many interesting facts about surface active agents. The fine distinction of detergents, spreading agents, and penetrants was made clear. The use of surface active agents to aid the penetration of monamonium phosphate (a fire deterrent) was proposed and discussed.

Specifications will have to wait until research now going on is at least partly completed. Penetration (cotton ball test), corrosion, toxicity, surface tension, and other characteristics must be evaluated.

The International Association of Fire Chiefs has an active committee on surface active agents. Mr. McNair, Mr. Stewart, and Mr. Cowan of our committee will correlate reported work of the

I.A.F.C. Committee with the U.C.L.A. research and Forest Service field tests. Tests will be made in connection with the wetting agent study being undertaken by the Forest Service.

It was pointed out that proportioners to introduce surface active agents into fire hose streams are needed before surface active agents can come into wide use. Several concerns are now developing such proportioners. The introduction of 1 percent agent with reasonable accuracy into a fire hose stream against a wide range of pressure and flow at reasonable cost is an interesting and exacting problem.

A probable function of this joint committee will be the preparation of "standard instructions for use of surface active agents on forest fires."

Developments in Hose

2. Hose activity by J. M. Flounders. Mr. Flounders (host to the committee at this meeting) presented a new, lighter cotton rubber-lined hose weighing 27 pounds per hundred feet without couplings, in the 1½" size. Quaker Rubber Corporation of Philadelphia is producing a similar hose.

In the last year consideration has been given to nylon, rayon, glass cloth, and imported linen as a textile base. Plastic linings, plastic impregnation of fabrics, and even nonwoven fabrics (made in a manner similar to paper) have been proposed. Your committee, we believe, is awake to the possibility of a new radically different and much lighter fire hose, but so far when bursting strength, abrasion resistance, friction loss, and endurance under repeated stress of bending are all considered, none of the new, and perhaps wild, ideas give much promise at this time.

A new rubber lined and rubber covered hose with integral self-locking rubber couplings developed by the B. F. Goodrich Company was presented by Mr. Flounders. Since couplings will account for a fair percentage of the weight of a length of hose, the new rubber couplings will be an advantage from the viewpoint of weight alone. The hose is still in the experimental stage but is sufficiently far advanced to warrant the order of a trial lot of 1,000 feet or more by the U. S. Forest Service.

There was considerable discussion of couplings. Threaded couplings are slow to couple. Mr. Cowan pointed out that there is at least one good coupling which can be clipped together instantly instead of screwing together and which are neither male nor female. This latter is a distinct advantage. Occasionally in forest fire fighting hundreds of feet (or even thousands of feet) of hose is stretched toward the fire, only to discover that the wrong end went first, and the male coupling on the hose at the pump will not fit the male pump thread. The whole length then has to be switched end for end, with the resultant loss of time and perhaps loss of forest to flame. A nonmale and female coupling would not have this disadvantage.

Because of these and other coupling considerations it was decided to develop a coupling branch of this committee, consisting of Mr. Funk, a coupling manufacturer's representative, a metallurgist, and an appropriate member of the A.S.M.E. Standards Committee.

Ground Breaking Equipment

3. Ground breaking equipment by William Kusz. Mr. Kusz' suggested specifications for ground breaking tractors is attached for the record. Mr. Kusz, of Caterpillar Tractor Company, has been transferred to another job not closely related to our problem. Efforts to stimulate this branch of our work are being made by Mr. Funk and Mr. Stewart. W. E. McCraw of Caterpillar will take Mr. Kusz' place in this activity.

There is a wide variety of ground breaking equipment and prime movers available that quite well fits the needs of forest fire fighting, but a good deal of constructive work can still be done.

Portable Pumps

4. Portable pumping units by R. B. Sargent. During the last year an analysis and tabulation has been made of performance and weight of a wide variety of portable pumps now being manufactured. This analysis indicated:

A. The urgent need for a standardized test form similar, for instance, to the Society of Automotive Engineers engine testing forms, this test form to include a performance curve made under standard conditions, a lift curve to indicate performance as a function of lift, and a standard method to determine performance at 75 percent engine load factor. Perhaps other criteria of performance will be found as we proceed to develop these forms in cooperation with portable pumper manufacturers. The present lack of a standard method of presenting all phases of performance by the manufacturers makes comparison and analysis difficult and pretty nearly guesswork.

B. The usefulness of a weight-performance ratio criterion was suggested. This is tentatively chosen as the weight divided by the water horsepower. One of the lightest, most popular portable pumpers has a low performance-weight ratio of 14.94, while a much heavier, also popular, pumper, particularly in the eastern regions, has a performance-weight ratio of 57.13. While each has a purpose and fills a niche of its own, the heavier one can and should be reduced in weight. Can you imagine an airplane engine, where weight also really counts, that is not classified as to pounds per horsepower?

C. The need for additional priming and lift standards. At present the federal specifications call for a maximum priming lift of 20" of mercury, or 22.7 feet. It is proposed to add a specification on the speed of priming, such as 20 feet in 60 seconds with 24 feet of suction hose. Another sensible addition would be to specify the lift at which performance curves are made, for instance 5 feet, and to specify the minimum drop in performance when operating on a 20-foot or similar figure, lift. Consider two pumping units, the first able to lift to 25 feet and capable of pumping 90 percent of its maximum low lift capacity at 20 feet lift, the second able to lift 28 feet and capable of pumping 30 percent of its maximum low lift capacity at 20 feet. Which would be the better pumping unit, all other factors being equal, is a question which we believe should be decided and a standard specification adopted.

We realize that we cannot write specifications or standards that are too severe. We also realize that these standards are worthless unless they are wholeheartedly accepted by at least a majority of the manufacturers on whom we rely for our portable pumpers. It is not only an engineering job; it is also a selling job.

General Remarks

After two years, a good deal of correspondence and only two meetings, for which we should apologize, we believe we are headed in the right direction. We can claim no definite accomplishments. The new, lightweight hose was conceived and partially developed before we came into the picture. We may have accelerated the development.

Our Akron meeting was so interesting to most of us that we decided to meet again in Roscommon, Mich., in about six months. All our members are busy men in their own fields. Almost all of them came a long distance to attend the meeting. We feel there is a certain degree of progress reflected in their desire to meet again soon.

We have made some false starts, both in our activity and in our thinking. We will probably make more. It appears now that our function is largely to stimulate interest in the forestry problems. Specifications and standards will follow whenever we can effectively set them.

R. B. SARGENT, *Chairman,*
A.S.M.E. Forest Protection Equipment Committee.

The above report has been approved by the S.A.F. members of the committee and has also been accepted by the A.S.M.E. group. It is submitted herewith as the record of progress for 1948.

ARTHUR A. BROWN, *S.A.F. Chairman,*
Forest Protection Equipment Committee.

Report of the Committee on Natural Areas

The Committee on Natural Areas was organized by the President of the Society in February, 1947, for the expressed purpose of considering the national needs for natural areas. The Society undertook this action on the recommendation of the Division of Silviculture and in so doing recognized that there is an increasing need by practicing foresters for a more comprehensive knowledge of natural developments within virgin forest associations. Only by reference to recorded data and by continuous study of areas containing virgin type associations may the forester view a managed forest in its proper perspective. Complete knowledge of the original forest is therefore essential to the practice of silviculture.

The committee recognized that the action now being taken by the Society comes very late in our nation's forest development history, and that effective action looking forward to the preservation of a sample or samples of every known virgin type has been long overdue. In a strict sense, no area of the United States may be considered absolutely virgin. Practically without exception, even the remotest forest has, in some small way, directly or indirectly been influenced by man to the extent of modifying natural ecol-

ogical trends and relations. It is vitally important that the Society should delay no longer in sponsoring an effective campaign to retain as many areas of virgin or nearly virgin forest types as possible in the interest of silvicultural research.

The committee accepted as its definition for a natural area the approved Society definition as found on page 9 of *Forestry Terminology:*

"*Natural Area.* An area set aside to preserve permanently in unmodified condition a representative unit of the virgin growth of a major forest type primarily for the purposes of science, research, and education. Timber cutting and grazing are prohibited and general public use discouraged."

Standards

The definition does not delineate the size limits for natural areas. Because of the lack of large virgin forest areas in the Central States and elsewhere east of the Mississippi, it is obvious that to obtain any representation of natural areas in many eastern states, the minimum acreage must of necessity be placed rather low.

It was believed that as a basis for adequate research work, the minimum acreage of a single type should not be less than ten acres provided that it is surrounded with an equal acreage of forest land to constitute a buffer zone; the entire twenty acres to be managed and protected in accordance with the approved definition for a natural area.

At the other extreme, the committee sees no need to set any particular limit except to make the observation that the preservation of a single type in blocks of more than a thousand acres appears unnecessary for the purposes of a natural area. However, it had no hesitancy in accepting properly qualified areas larger than a thousand acres in size. The committee, therefore, has set the area qualifications generally at twenty acres to a thousand acres, within which the minimum area of a single type may be as low as ten acres.

In order to ensure permanency of protection the committee required sponsoring agencies to demonstrate how the natural area will be preserved permanently whether through an act of legislation, regulation, endowment, trust, will, or otherwise.

Although the committee recognized the emphasis on major types set forth in the approved natural area definition, it agreed that all types recognized by the Society should be listed regardless of whether such types are considered long or short lived, temporary or climax, and that endeavor be made to include all recognized types within natural areas.

Procedure

In examining the problem confronting it, the committee agreed that its objectives were basically twofold. First, a recognition and listing of all known qualified natural areas, together with the types preserved therein; second, a determination of what virgin types were not included within the recognized natural areas and to provide a plan whereby such types might be included within qualified natural areas.

In furtherance of the first objective, the committee forwarded under date of June 3, 1947, a letter addressed to heads of all federal forest land management agencies, all state foresters, all deans of forestry schools, and all chairmen of the respective Sections of the Society. A copy of this letter is shown in Exhibit *A*.

Excellent cooperation was afforded by the federal agencies, state foresters, and forestry colleges. Some 70 reports were received, the majority of which were purely negative in character. From those reports which listed areas for consideration, a list of qualified areas has been made and is given in Exhibit *B*.

This listing was prepared using the same cover types as contained in the Society's publications *Forest Cover Types of the Eastern United States* (third edition, 1940) and *Forest Cover Types of Western North America* (1945). The listing includes by cover types the name of the natural area, the area of the type protected, the total area of the natural area within which the type appears, the name of the state and county in which the natural area is located, the protection agency, and the name of the administration unit within which the natural area lies.

Reference to Exhibit *B* will show that the Society has recognized 147 cover types (97 in the East and 50 in the West) of which the committee finds that 66 cover types (38 in the East and 28 in the West) are present in qualified natural areas, whereas 81 cover types (59 in the East and 22 in the West) are not. It is the committee's belief, however, that this type of listing is not the sole basis on which to evaluate the completeness of our existing natural area system.

It is perfectly obvious by reference to the listing that too many cover types are inadequately represented geographically with respect to their range. The committee thinks that several representatives of each cover type are required, and that such representative areas should be well distributed throughout the known range of the type not only on a geographical basis, but also on the basis of environmental factors, such as altitude and climate, which affect species, associations, and natural trends.

Although it was not considered to be a part of the committee's work, some analysis and consideration of the cover types recognized by the Society became necessary. It appears to this committee that the listing of eastern cover types, which was originally formulated in 1931, needs some reconsideration in light of the more up-to-date silvicultural knowledge with respect to actual plant associations. Such reconsideration would, in the committee's opinion, reduce the number of cover types presently recognized by the Society and at the same time reduce the number of types not protected in natural areas as the present listing in Exhibit *B* indicates.

Exhibit A

(Sent to Heads of Federal Forest Land Management Agencies, State Foresters, Deans of Forestry Colleges, and Chairmen of the Sections of the Society of American Foresters.)

June 3, 1947

DEAR SIR:

The Society of American Foresters, recognizing the need for samples of virgin forest types wherein the characteristic plant and animal life and soil conditions will be preserved in an unmodified condition in order that the same may be available in perpetuity for purposes of science, research, and education, has formed a Committee on Natural Areas to determine which virgin forest types of the Nation are now preserved and which are not.

For the purposes of this study the Society of American Foresters' approved definition for a Natural Area is being followed, namely:

"*Natural Area.* An area set aside to preserve permanently in unmodified condition a representative unit of the virgin growth of a major forest type primarily for the purposes of science, research, and education. Timber cutting and grazing are prohibited and general public use discouraged."

We seek a record of every forest area in the nation which falls within the above definition and which, by reason of law, regulation, endowment, trust, or will, has been set aside and *provision made for its preservation permanently* in so far as may be determined at this time. To this end we solicit your assistance.

It will be noted that this mimeographed request is addressed to four different groups. The committee hopes by this means to obtain a complete report on natural areas under all ownerships of forest lands. Specifically, we request the cooperation first of the federal agencies for those federal lands under their jurisdiction, second of the state foresters for the state lands under their control, third of the forestry schools for the school lands administered by them, and fourth of the respective chairmen of the Sections of the Society of American Foresters for such information on privately owned lands which have been endowed by foundations or otherwise in such a manner as to provide for the protection of the Natural Area in a manner similar to that which may be provided by a public agency.

To accomplish a recordation of all Natural Areas the committee would appreciate your cooperation toward furnishing us a listing of all such areas in accordance with the following outline:

(1) Name of Natural Area;
(2) State;
(3) County;
(4) Name of administration unit (such as national forest, state park, etc.);
(5) Acreage (total acreage of area and acreage of each type represented);
(6) Vegetative types preserved; to be listed in accordance with the type number and type title as set forth in the Society of American Foresters publications: *Forest Cover Types of the Eastern United States* (3rd Edition, 1940) and *Forest Cover Types of Western North America* (1945).

Furthermore, the committee would appreciate having for public and school lands a brief statement on the policy of reserving natural areas and for privately owned lands a brief summary of the reservation and provision under which each natural area was set up.

The committee appreciates that the data required will necessitate in some instances considerable work on the part of the agencies concerned. Hence, it does not intend to set an early date for the submission of data. However, we would appreciate an early reply indicating whether any Natural Areas have been set aside and if so that a report will be furnished. In the latter case we trust that the data may be submitted not later than November 1, 1947.

Sincerely yours,
JOHN F. SHANKLIN, *Chairman,*
Committee on Natural Areas.

Problems and Exceptions

In its study of the areas proposed for consideration as natural areas, the committee was confronted with several perplexing problems. These may be grouped for convenience into three categories, namely: (1) recreational areas; (2) lack of permanency; and (3) actions pending.

With respect to recreational areas, it will be noted that none of the areas under the jurisdiction of the National Park Service are included in the listing of natural areas. It would appear that this is a serious omission as undoubtedly the national parks and monuments should be ideal areas within which natural areas might be found. With this viewpoint, the committee is in full accord. The difficulty that confronted the committee was simply the fact that the National Park Service has not delineated either on

Exhibit B

LISTING OF FOREST COVER TYPES WITH NATURAL AREAS

S.A.F. type No.	Name of cover types as recognized by the S.A.F	Name of natural area	Area of type	Total of natural area	State	County	Protection agency	Administration unit
			Acres	*Acres*				
1	Jack pine	Keeley Creek	420	640	Minn.	Lake	F. S.	Superior N.F.
		Lac La Croix	28	973	Minn.	St. Louis	F. S.	Superior N.F.
2	Jack oak							
3	Norway pine	Pine Point	261	1,176	Minn.	Cass	F. S.	Chippewa N.F.
		Lac La Croix	208	973	Minn.	St. Louis	F. S.	Superior N.F.
		(Seney)	100	100	Mich.	Schoolcraft	F&WLS	Seney N.W.R.
4	Aspen	Pine Point	310	1,176	Minn.	Cass	F. S.	Chippewa N.F.
		Lac La Croix	214	973	Minn.	St. Louis	F. S.	Superior N.F.
5	Pin cherry	Black Mountain	13	1,405	N. C.	Yancey	F. S.	Pisgah N.F.
6	Paper birch							
7	Gray birch—red maple							
8	White pine—red oak—white ash							
9	White pine	Little Laurel Run	45	2,092	Va.	Rockingham	F. S.	Geo. Wash. N.F.
		Ramseys Draft	85	1,794	Va.	Augusta	F. S.	Geo. Wash. N.F.
		Pine Point	42	1,176	Minn.	Cass	F. S.	Chippewa N.F.
		Lac La Croix	232	973	Minn.	St. Louis	F. S.	Superior N.F.
		Barre Woods	20	130	Mass.	Worcester	Harvard U.	Harvard Forest
		(Seney)	50	50	Mich.	Schoolcraft	F&WLS	Seney N.W.R.
10	White pine—hemlock							
11	Hemlock	Little Laurel Run	127	2,092	Va.	Rockingham	F. S.	Geo. Wash. N.F.
		Ramseys Draft	179	1,794	Va.	Augusta	F. S.	Geo. Wash. N.F.
		Rock Creek	176	189	Ky.	Laurel	F. S.	Cumberland N.F.
		Tionesta	2,113	2,113	Pa.	McKean	F. S.	Allegheny N.F.
		Pisgah	20	20	N. H.	Cheshire	Harvard U.	Harvard Forest
		Barre Woods	20	130	Mass.	Worcester	Harvard U.	Harvard Forest
12	Sugar maple—beech—yellow birch	The Bowl	92	510	N. H.	Grafton	F. S.	White Mt. N.F.
		Black Mountain	126	1,405	N. C.	Yancey	F. S.	Pisgah N.F.
		(Seney)	350	350	Mich.	Schoolcraft	F&WLS	Seney N.W.R.
13	Sugar maple—basswood							
14	Sugar maple							
15	Yellow birch							
16	Yellow birch—red spruce	The Bowl	123	510	N. H.	Grafton	F. S.	White Mt. N.F.
		(Moosehorn)	100	100	Maine	Washington	F&WLS	Moosehorn N.W.R.
17	Red spruce—sugar maple—beech	The Bowl	20	510	N. H.	Grafton	F. S.	White Mt. N.F.
18	Red spruce	The Bowl	220	510	N. H.	Grafton	F. S.	White Mt. N.F.
19	Red spruce—southern balsam fir	Black Mountain	542	1,405	N. C.	Yancey	F. S.	Pisgah N.F.
20	Paper birch—red spruce—balsam fir							

21	White spruce—balsam fir—paper birch							
22	Balsam fir	Lac La Croix	36	973	Minn.	St. Louis	F. S.	Superior N.F.
23	Black spruce	Lac La Croix	39	973	Minn.	St. Louis	F. S.	Superior N.F.
		Pine Point	18	1,176	Minn.	Cass	F. S.	Chippewa N.F.
		Keeley Creek	146	640	Minn.	Lake	F. S.	Superior N.F.
24	Northern white cedar							
25	Tamarack	Pine Point	15	1,176	Minn.	Cass	F. S.	Chippewa N.F.
		Keeley Creek	20	640	Minn.	Lake	F. S.	Superior N.F.
		(Rice Lake)	200	200	Minn.	Aitkin	F&WLS	Rice Lake N.W.R.
26	Black ash—American elm—red maple							
27	Mesquite							
28	Mountain cedar							
29	Shin oak							
30	Post oak	(Kentucky)	100	100	Ky.	Lyon	F&WLS	Ky. Woodlands N.W.R.
31	Post oak—blackjack oak	(Necedah)	100	100	Wis.	Juneau	F&WLS	Necedah N.W.R.
32	Black oak—post oak							
33	Scarlet oak—black oak							
34	Southern red oak—scarlet oak							
35	Bear oak	Ramseys Draft	16	1,794	Va.	Augusta	F. S.	Geo. Wash. N.F.
36	Chestnut oak	Little Laurel Run	1,769	2,092	Va.	Rockingham	F. S.	Geo. Wash. N.F.
		Black Mountain	229	1,405	N. C.	Yancey	F. S.	Pisgah N.F.
		Ramseys Draft	368	1,794	Va.	Augusta	F. S.	Geo. Wash. N.F.
37	Pitch pine	Ramseys Draft	210	1,794	Va.	Augusta	F. S.	Geo. Wash. N.F.
		Little Laurel Run	89	2,092	Va.	Rockingham	F. S.	Geo. Wash. N.F.
38	Shortleaf pine	Rock Creek	13	189	Ky.	Laurel	F. S.	Cumberland N.F.
39	Shortleaf pine—post oak							
40	Shortleaf pine—southern red oak—scarlet oak							
41	Shortleaf pine—white oak							
42	Shortleaf pine—Virginia pine							
43	Virginia pine—southern red oak							
44	Virginia pine							
45	Bur oak							
46	Eastern red cedar							
47	Black locust							
48	White pine—chestnut oak—chestnut							
49	White oak—black oak—red oak	Pine Point	13	1,176	Minn.	Cass	F. S.	Chippewa N.F.
		(Kentucky)	100	100	Ky.	Trigg	F&WLS	Ky. Woodlands NWR
50	White oak							
51	Red oak—basswood—white ash	Ramseys Draft	53	1,794	Va.	Augusta	F. S.	Geo. Wash. N.F.
		Barre Woods	20	130	Mass.	Worcester	Harvard U.	Harvard Forest
52	Red oak							
53	Yellow poplar							
54	Yellow poplar—hemlock	Little Laurel Run	62	2,092	Va.	Rockingham	F. S.	Geo. Wash. N.F.

S.A.F. type No.	Name of cover types as recognized by the S.A.F.	Name of natural area	Area of type Acres	Total of natural area Acres	State	County	Protection agency	Administration unit
55	Yellow poplar—white oak—red oak	The Indiana Pioneer Mothers Memorial	62	88	Ind.	Orange	F. S.	Hoosier P.U.
56	Chestnut	Black Mountain	419	1,405	N. C.	Yancey	F. S.	Pisgah N.F.
		Ramseys Draft	883	1,794	Va.	Augusta	F. S.	Geo. Wash. N.F.
57	Beech—sugar maple	The Indiana Pioneer Mothers Memorial	26	88	Ind.	Orange	F. S.	Hoosier P.U.
58	Beech							
59	River birch—sycamore							
60	Silver maple—American elm							
61	Cottonwood							
62	Sand pine							
63	Longleaf pine							
64	Longleaf pine—turkey oak							
65	Turkey oak							
66	Southern red cedar							
67	Live oak—cabbage palmetto	(St. Marks)	100	100	Fla.	Wakulla	F&WLS	St. Marks N.W.R.
		(Cape Romain)	150	150	S. C.	Charleston	F&WLS	Cape Romain N.W.R.
68	Loblolly pine—shortleaf pine							
69	Loblolly pine	(Piedmont)	100	100	Ga.	Jones	F&WLS	Piedmont N.W.R.
		(Mattamuskeet)	75	75	N. C.	Hyde	F&WLS	Mattamuskeet N.W.R.
70	Loblolly pine—southern red oak							
71	Loblolly pine—white oak							
72	Loblolly pine—slash pine							
73	Longleaf pine—slash pine	Osceola	323	998	Fla.	Baker	F. S.	Osceola N.F.
74	Slash pine	Osceola	207	998	Fla.	Baker	F. S.	Osceola N.F.
75	Cabbage palmetto—slash pine							
76	Water oak—willow oak							
77	Red gum—yellow poplar							
78	Live oak							
79	Beech—evergreen magnolia							
80	Hickory—swamp chestnut oak—white oak							
81	Red gum—swamp red oak	(Noxubee)	100	100	Miss.	Oktibbeha	F&WLS	Noxubee N.W.R.
82	Red gum	Delta Purchase Unit	40	140	Miss.	Sharkey	F. S.	Miss. N.F.
83	Red gum—Nuttall's oak—willow oak	(Noxubee)	100	100	Miss.	Noxubee	F&WLS	Noxubee N.W.R.
84	Willow oak							
85	Sugarberry—elm							
86	Oak—elm—ash							
87	Southern cypress—hardwood							
88	Willow							
89	Overcup oak—water hickory	Delta Purchase Unit	100	140	Miss.	Sharkey	F. S.	Miss. N.F.
		(White River)	600	600	Ark.	Philips	F&WLS	White River N.W.R.

90	Southern white cedar							
91	Pond pine	Osceola	18	998	Fla.	Baker	F. S.	Osceola N.F.
92	Slash pine—swamp black gum							
93	Pond cypress							
94	Southern cypress	Osceola	109	998	Fla.	Baker	F. S.	Osceola N.F.
		(Big Lake)	500	500	Ark.	Mississippi	F&WLS	Big Lake N.W.R.
		(Okeefenokee)	15,000	15,000	Ga.	Chariton	F&WLS	Okeefenokee N.W.R.
95	Tupelo gum	Osceola	341	998	Fla.	Baker	F. S.	Osceola N.F.
96	Mahogany							
97	Mangrove							
201	White spruce							
202	White spruce—birch							
203	Poplar—birch							
204	Black spruce							
205	Mountain hemlock—alpine fir							
206	Engelmann spruce—alpine fir	Snowy Range	739	771	Wyo.	Albany	F. S.	Medicine Bow N.F.
		Hurricane Canyon	30	520	Colo.	Teller	F. S.	Pike N.F.
		Canyon Creek	379	1,034	Idaho	Bonner	F. S.	Kaniksu N.F.
		Gothic	509	904	Colo.	Gunnison	F. S.	Gunnison N.F.
		San Francisco Peaks	350	880	Ariz.	Coconino	F. S.	Coconino N.F.
207	Red fir							
208	Whitebark pine	Harvey Monroe Hall	475	4,250	Calif.	Mono	F. S.	Mono N.F.
		Canyon Creek	50	1,034	Idaho	Bonner	F. S.	Kaniksu N.F.
209	Bristlecone pine							
210	Interior Douglas fir	Coram	175	811	Mont.	Flathead	F. S.	Flathead N.F.
		Canyon Creek	14	1,034	Idaho	Bonner	F. S.	Kaniksu N.F.
		Hurricane Canyon	354	520	Colo.	Teller	F. S.	Pike N.F.
		Santa Catalina	40	4,464	Ariz.	Pima	F. S.	Coronado N.F.
		Oak Creek Canyon	40	940	Ariz.	Coconino	F. S.	Coconino N.F.
		San Francisco Peaks	350	880	Ariz.	Coconino	F. S.	Coconino N.F.
		Monument Canyon	60	640	N. Mex.	Sancloval	F. S.	Sante Fe N.F.
		Butterfly Peak	100	1,000	Ariz.	Pima	F. S.	Coronado N.F.
211	White fir							
212	Larch—Douglas fir	Ochoco Divide	907	1,920	Oreg.	Wheeler	F. S.	Ochoco N.F.
		Coram	605	811	Mont.	Flathead	F. S.	Flathead N.F.
		Canyon Creek	12	1,034	Idaho	Bonner	F. S.	Kaniksu N.F.
		(Pend Oreille)	200	200	Wash.	Stevens	F&WLS	Little Pend Oreille N.W.R.
213	Grand fir—larch—Douglas fir	Metolius	125	1,440	Oreg.	Jefferson	F. S.	Deschutes N.F.
214	Ponderosa pine—larch—Douglas fir	Pringle Falls	353	1,160	Oreg.	Deschutes	F. S.	Deschutes N.F.
		Persia M. Robinson	640	640	Oreg.	Wasco	F. S.	Mt. Hood N.F.
215	Western white pine	Tepee Creek	746	746	Idaho	Bonner	F. S.	Kaniksu N.F.
		Montford Creek	299	335	Idaho	Kootenai	F. S.	Coeur d'Alene N.F.
		Coram	21	811	Mont.	Flathead	F. S.	Flathead N.F.
		Canyon Creek	313	1,034	Idaho	Bonner	F. S.	Kaniksu N.F.
216	Blue spruce							

S.A.F. type No.	Name of cover types as recognized by the S.A.F.	Name of natural area	Area of type	Total of natural area	State	County	Protection agency	Administration unit
			Acres	*Acres*				
217	Aspen	Narraguinnep	114	2,800	Colo.	Dolores	F. S.	San Juan N.F.
		San Francisco Peaks	100	880	Ariz.	Coconino	F. S.	Coconino N.F.
218	Lodgepole pine	Pringle Falls	563	1,160	Oreg.	Deschutes	F. S.	Deschutes N.F.
		Harvey Monroe Hall	800	4,250	Calif.	Mono	F. S.	Mono N.F.
		Canyon Creek	47	1,034	Idaho	Bonner	F. S.	Kaniksu N.F.
		(Red Rock)	60	60	Mont.	Beaverhead	F&WLS	Red Rock Lakes NWR
219	Limber pine							
220	Rocky Mountain juniper							
221	Red alder	Lake 22	15	790	Wash.	Snohomish	F. S.	Mt. Baker N.F.
222	Black cottonwood—willow	Lake 22	10	790	Wash.	Snohomish	F. S.	Mt. Baker N.F.
223	Sitka spruce	Quinault	360	1,435	Wash.	Grays Harbor	F. S.	Olympic N.F.
		Neskowin Crest	127	692	Oreg.	Tillamook	F. S.	Siuslaw N.F.
224	Western hemlock	Long Creek	200	640	Wash.	Snohomish	F. S.	Mt. Baker N.F.
		Neskowin Crest	305	692	Oreg.	Tillamook	F. S.	Siuslaw N.F.
		Montford Creek	29	335	Idaho	Kootenai	F. S.	Coeur d'Alene N.F.
		Canyon Creek	129	1,034	Idaho	Bonner	F. S.	Kaniksu N.F.
		Quinault	495	1,435	Wash.	Grays Harbor	F. S.	Olympic N.F.
225	Sitka spruce—western hemlock	Quinault	280	1,435	Wash.	Grays Harbor	F. S.	Olympic N.F.
		Neskowin Crest	260	692	Oreg.	Tillamook	F. S.	Siuslaw N.F.
226	Pacific silver fir—hemlock	Lake 22	80	790	Wash.	Snohomish	F. S.	Mt. Baker N.F.
		Long Creek	120	640	Wash.	Snohomish	F. S.	Mt. Baker N.F.
227	Western redcedar—western hemlock	Lake 22	455	790	Wash.	Snohomish	F. S.	Mt. Baker N.F.
		Long Creek	240	640	Wash.	Snohomish	F. S.	Mt. Baker N.F.
		Quinault	240	1,435	Wash.	Grays Harbor	F. S.	Olympic N.F.
		North Fork Nooksack	437	1,352	Wash.	Whatcom	F. S.	Mt. Baker N.F.
228	Western redcedar	Cedar Flats	220	680	Wash.	Skamania	F. S.	Columbia N.F.
		Lake 22	40	790	Wash.	Snohomish	F. S.	Mt. Baker N.F.
		Wind River	40	1,100	Wash.	Skamania	F. S.	Columbia N.F.
229	Pacific Douglas fir	Port Orford Cedar	322	1,133	Oreg.	Coos	F. S.	Siskiyou N.F.
		Cedar Flats	400	680	Wash.	Skamania	F. S.	Columbia N.F.
		Quinault	60	1,435	Wash.	Grays Harbor	F. S.	Olympic N.F.
		Wind River	365	1,100	Wash.	Skamania	F. S.	Columbia N.F.
		North Fork Nooksack	482	1,352	Wash.	Whatcom	F. S.	Mt. Baker N.F.
230	Douglas fir—western hemlock	Wind River	695	1,100	Wash.	Skamania	F. S.	Columbia N.F.
		North Fork Nooksack	296	1,352	Wash.	Whatcom	F. S.	Mt. Baker N.F.
		Long Creek	40	640	Wash.	Snohomish	F. S.	Mt. Baker N.F.
231	Port Orford White cedar—Douglas fir	Port Orford cedar	811	1,133	Oreg.	Coos	F. S.	Siskiyou N.F.
		Coquille River Falls	500	500	Oreg.	Coos	F. S.	Siskiyou N.F.
		Lobster Creek	1,205	1,340	Oreg.	Curry	F. S.	Siskiyou N.F.
232	Redwood							
233	Oregon white oak							
234	Oak—madrone	Lobster Creek	135	1,340	Oreg.	Curry	F. S.	Siskiyou N.F.
235	Cottonwood—willow							
236	Bur oak	(Fort Niobrara)	75	75	Nebr.	Cherry	F&WLS	Fort Niobrara NWR

237	Interior ponderosa pine	Narraguinnep	891	2,800	Colo.	Dolores	F. S.	San Juan N.F.
		Hurricane Canyon	101	520	Colo.	Teller	F. S.	Pike N.F.
		Upper Pine Creek	1,070	1,190	S. Dak.	Pennington	F. S.	Harney N.F.
		Meeks Table	77	86	Wash.	Yakima	F. S.	Snoqualmie N.F.
		Goodlow Mountain	1,081	1,260	Oreg.	Lake	F. S.	Fremont N.F.
		Metolius	1,315	1,440	Oreg.	Jefferson	F. S.	Deschutes N.F.
		Ochoco Divide	968	1,920	Oreg.	Wheeler	F. S.	Ochoco N.F.
		Pringle Falls	196	1,160	Oreg.	Deschutes	F. S.	Deschutes N.F.
		Santa Catalina	3,160	4,464	Ariz.	Pima	F. S.	Coronado N.F.
		Pole Bridge Canyon	320	320	Ariz.	Cochise	F. S.	Coronado N.F.
		Oak Creek Canyon	900	940	Ariz.	Coconino	F. S.	Coconino N.F.
		Monument Canyon	580	640	N. Mex.	Sandoval	F. S.	Sante Fe N.F.
		Butterfly Peak	420	1,000	Ariz.	Pima	F. S.	Coronado N.F.
		(Fort Niobrara)	200	200	Nebr.	Cherry	F&WLS	Fort Niobrara NWR
238	Sierra juniper	Devils Garden	1,600	1,600	Calif.	Modoc	F. S.	Modoc N.F.
		Goodlow Mountain	100	1,260	Oreg.	Lake	F. S.	Fremont N.F.
239	Pinon—juniper	Sweetwater	2,012	2,235	Nev.	Mineral	F. S.	Mono N.F.
		Narraguinnep	715	2,800	Colo.	Dolores	F. S.	San Juan N.F.
		Butterfly Peak	80	1,000	Ariz.	Pima	F. S.	Coronado N.F.
240	Arizona cypress							
241	Western live oak							
242	Mesquite							
243	Ponderosa pine—sugar pine —fir	Pringle Falls	48	1,160	Oreg.	Deschutes	F. S.	Deschutes N.F.
		Abbott Creek	2,055	2,660	Oreg.	Jackson & Douglas	F. S.	Rogue River N.F.
244	Pacific ponderosa pine—Douglas fir							
245	Pacific ponderosa pine							
246	California black oak							
247	Jeffrey pine	Indiana Summit	1,000	1,000	Calif.	Inyo	F. S.	Inyo N.F.
248	Knobcone pine							
249	Canyon live oak							
250	Digger pine—oak	San Joaquin	50	50	Calif.	Madera	F. S.	San Joaquin Exp. Range

NOTE: Names of natural areas in parenthesis are temporary names.
F. S.—Forest Service
N. F.—National Forest
F&WLS—Fish and Wildlife Service.
N.W.R.—National Wildlife Refuge.
P.U.—Purchase Unit.

the ground or on its administrative maps and development plans areas which might be termed natural areas and which through administrative action would be set aside from future development as recreational areas. The committee knows that the national parks and monuments are well protected in accordance with the existing law and hence constitute excellent natural areas. However, in the absence of clear-cut administrative provisions for the reservation of natural areas, the committee deemed it unwise to list as approved many suitable areas now contained within the national parks and monuments.

Similarly, a considerable number of state parks, including the Adirondack Preserve, were excluded. The committee feels that the state parks and recreational areas do contain cover type associations which would qualify for inclusion within natural areas, provided adequate provision was made for guaranteeing restrictions against recreational encroachments in accordance with the approved Society definition.

The information afforded the committee with respect to many areas did not disclose any guarantee of permanency of protection. Hence, many areas, including several privately owned properties were excluded.

More Work Needed

Considerable interest has been generated throughout the country and the committee now has a voluminous file of correspondence on hand which requires considerable study, review, and further correspondence. As an example of matters requiring further follow-up, the recent study by the Ecologist Union of America entitled "A Preliminary Inventory of Nature Sanctuaries in North America" is cited. This study lists many hundreds of areas which should be studied as possible qualified natural areas. The committee has not been able to undertake such a study. Segments of the state game preserves, especially those in the Central States, would appear to be fertile areas for possible natural area consideration. Likewise, many reports have been received expressing interest in the study and indicating that consideration is being given at local levels to setting aside a specific area which might be considered a natural area. These matters all require further study.

The committee believes that the Forest Service and the Fish and Wildlife Service should be complimented for their initial efforts in setting aside natural areas and be encouraged by the Society to seek out and set aside as many more natural areas as may be qualified within the national forests and national wildlife refuges. The committee feels that both the Forest Service and the Bureau of Land Management should be urged to set aside as early as possible natural areas within the territory of Alaska which contains our largest remaining virgin forest areas. In so far as the Bureau of Land Management is concerned, this may require the seeking of additional legislation which, if necessary, should receive the support of the Society.

The committee recommends that the National Park Service be urged to take the necessary administrative action to delineate on its master plans natural areas in accordance with the definitions and policies enunciated herein and to present those areas for listing.

It urges all public agencies—federal, state, county, and municipal—to seek out and preserve additional natural areas which would include (a) those types not represented in the present list and (b) more complete coverage for all types. It further suggests the requisition by public agencies of those qualified natural areas for which private ownership may not be able to guarantee preservation in perpetuity. But it recommends that full encouragement be given to any private agency endeavoring to preserve such areas.

Finally, the committee encourages suitable agencies and individuals to take advantage of the opportunities for research afforded by natural areas.

Conclusion

The committee feels that only a beginning has been made towards the attainment of the major objective of preserving samples of all virgin types. It is of the opinion that this objective may be advanced more expeditiously through means other than through the committee as presently organized. It believes that a Committee on Natural Areas to function properly should be reduced to a three-man unit, the members of which shall be located within one city or locality. The present committee is divided in its opinion as to whether such a committee should be organized as a Society committee or whether it should be attached to the Division of Silviculture for supervision and guidance. These two alternatives are hereby placed before the Council for its consideration.

The present committee requests that it be discharged.

L. I. BARRETT,
C. FRANK BROCKMAN,
C. H. COULTER,
REGINALD D. FORBES,
SVEND HEIBERG,
JOHN F. SHANKLIN, *Chairman.*

Statement from the Committee on Tree Nomenclature

This committee, which consists of W. M. Harlow, E. S. Harrar, R. W. Hess, R. B. Miller, T. T. Munger, E. J. Schreiner, and I, has no formal report to make this year. There is little for this committee to do at this particular time; however, we have not been entirely idle and there has been some correspondence between the members. My own feeling is that the committee serves a purpose as a means whereby the Society of American Foresters can voice its sentiments in favor of more stability and better standardization of tree names before the next International Botanical Congress, to be held in Stockholm in 1950.

It may be recalled that the British Society of Foresters memorialized the last International Botanical Congress (at Amsterdam, 1940) in favor of the principle of conserved species names for outstanding economic species. That proposition received a record number of votes (over 60) but was snowed under. In my judgment, the Society of American Foresters should support that move in 1950. It will also be recalled that the Cambridge, England, Congress of 1935 appointed a committee to prepare a list of economic plants the names of which would be standard for ten years. Prof. Alfred Rehder of the Arnold Arboretum tells me he was the only member of that rather small international committee to do any work on that list. I think our Society should urge the 1950 Congress to issue a list of that type, with adequate American representation.

The American Society of Plant Taxonomists has a nomenclature committee of which its president, Dr. Wendell H. Camp of the New York Botanical Garden, is chairman. Its so-called "nomenclature jury," however, has overwhelmingly turned down a number of constructive suggestions looking toward greater name stability, such as the proposition of *nomina specifica conservanda* (which, being interpreted, would save a name like *Acer saccharum* for sugar maple) and has also turned the *pollex versus* on a proposal to outlaw name changes under the priority rule where the name in general use has not been questioned for, say, 75 or 100 years. Such a rule, if adopted, would save a name like *Abies nobilis* for noble fir. I think the prestige of this Society might be of service in backing progressive legislation of the type indicated in 1950.

WILLIAM A. DAYTON, *Chairman.*

Other Committees

The Finance Committee reports direct to the Council.

Several other Society committees are at work on special projects but were not far enough along to make a report at this meeting.

These committees, whose reports will be made later, are as follows:

Committee on Foresters' Field Manual.
Committee on Forestry Objectives.
Committee on Graduate Work in Forestry.
Committee on JOURNAL OF FORESTRY Award.
Collating Committee on Forestry Terminology.
Collating Committee on Grade Standardization of Forest Planting Stock.

Joint Meeting of the Council and Section Delegates

A joint meeting of the Council and official delegates from the Sections was held in the Statler Hotel, Boston, on the afternoon of December 15, 1948. The purpose of the meeting was to consider (1) the organization of subsections and a proposed bylaw governing their activities, and (2) any other appropriate items of business of interest to the Sections.

Representing the Council were President Clyde S. Martin, Vice President Charles F. Evans, Paul M. Dunn, Charles H. Flory, W. B. Greeley, C. S. Herr, R. E. McArdle, DeWitt Nelson, and John W. Spencer.

Representing the executive office of the Society were Henry Clepper, executive secretary; R. D. Hostetter, assistant executive secretary; and Miss L. A. Warren, business manager.

The official delegates, as previously certified by the several Sections, were as follows (where a second person is named, he served as alternate): Allegheny: D. B. Bonebrake, M. W. Humphrey; Appalachian: Roy B. Thomson; Central Rocky Mountain: Ralph Bryant, John W. Spencer; Central States: Harry Switzer; Columbia River: Stuart Moir; Gulf States: Frank Spearey, James H. Kitchens; Inland Empire: E. H. Steffen; Intermountain: L. M. Turner, T. W. Daniel; Kentucky-Tennessee: W. Paul Bullock; New England: Lewis C. Swain; New York: T. F. Luther, David B. Cook; Northern California: Myron Krueger; Northern Rocky Mountain: K. P. Davis; Ozark: none; Puget Sound: Gordon D. Marckworth, W. D. Hagenstein; Southeastern: E. A. Ziegler; Southern California: DeWitt Nelson; Southwestern: none; Upper Mississippi Valley: George B. Amidon, Z. A. Zasada; Washington: A. M. Sowder; and Wisconsin-Upper Michigan: Ray Bassett.

In addition to the official delegates, the Sections were represented by numerous observers who were invited to participate in the discussions and did so.

Subsections

It was brought out that most of the Sections have subordinate units of members known variously as subsections, forestry forums, or local groups. These subordinate units total about 40 in number and new ones are constantly being formed.

It is the consensus of the Council that the subsections represent an important and growing development in the Society and accomplish several desirable objectives:

1. They provide forums where foresters can meet for discussion of important local technical problems.

2. They afford opportunities for foresters to become better acquainted with local woodland owners, operators, and other technicians whose problems are of mutual interest to foresters.

3. They provide means for social as well as professional intercourse for those foresters who, because of remoteness of work or for other reasons, are unable to attend meetings of the Sections or of the national Society.

Through reports by the various Section delegates, the following pertinent information about the subsections was cited as a basis for consideration by the Council of a proposed bylaw. (As used in the following statements "subsection" is synonymous with forestry forum or local group.)

1. All subsections hold at least one meeting a year; most hold two or more meetings.

2. At most subsection meetings, if not all, nonmember guests are specifically encouraged to attend and to participate in programs and discussions.

3. A loose and somewhat informal type of organization has served many of the subsections quite well, and some are specifically opposed to any action by the Council which would require them to adopt a formal organizational setup.

4. Other subsections, particularly some of the newer and larger groups, desire action by the Council which would permit them, if they so desire, to adopt bylaws and otherwise function as an official part of the Section under a more formal arrangement than now prevails.

5. Practically all subsections wish to avoid overorganization, and even those which desire a Society bylaw to govern their activities apparently desire one which will be permissive rather than obligatory.

6. In the case of large Sections containing several states, some sentiment exists for organizing new subsections along state lines.

7. The financing of subsection activities is an everpresent problem. Funds are raised by individual contributions in most cases, in others by a pro-rata return to the subsections of funds from Section dues. Some delegates believe that a bylaw by the Council would make it easier to

finance subsection activities through allocation of Section funds.

Desiring to recognize subsections officially and to provide the necessary warrant for them to function within the framework of the Sections, the Council presented for consideration the following proposed bylaw:

"A subsection of any Section may be authorized by the officers or executive committee of the Section upon the written petition of ten (fifteen?) or more voting members of the Section, of whom at least five shall be Members or Fellows, resident in an area where a strong local organization may be effected.

"Subsections shall hold at least two (one?) meetings each year to retain their authorization. Open meetings are specifically authorized.

"The officers of each subsection shall include a chairman, a vice chairman, and a secretary-treasurer, who shall be voting members of the Society (serving concurrently with the officers of the Section?) and who shall be elected by the members of the subsection. A current list of the officers and members of each subsection shall be on file with the secretary of the Section.

"A Section is authorized to appropriate funds to the subsection for the conduct of its business.

"Actions or recommendations of a subsection will not receive recognition by the Society until approved by the Section. The Council (Section) shall have the right to rescind the authorization of any subsection and to terminate its existence."

After discussion of the foregoing proposed bylaw, none of the provisions of which met complete acceptance by the delegates, Mr. Moir made the following motion which was seconded and carried:

"That President Martin appoint a small committee to revise the suggested bylaw after which vote of the Sections on it is to be obtained before final action by the Council."

Forestry News

President Martin reported on certain aspects of Society finances, particularly commenting on the cost of *Forestry News*, and requested advice from the Sections as to the paper's value and continued publication.

Forestry News cost about $4,000 in 1948. Additional funds are needed both for the JOURNAL OF FORESTRY and for other desirable projects, a new directory of members, for example. A question before the Council is (1) shall *Forestry News* be discontinued; (2) shall it be combined with the JOURNAL OF FORESTRY with reduced contents and at a considerable saving; or (3) shall it be continued in about its present form?

After much discussion, the Section delegates were polled with the following results: To discontinue—10; To combine with the JOURNAL—6; To continue in present form—none.

Col. Greeley suggested that *Forestry Digest*, issued monthly by American Forest Products Industries, Inc., might be made available to all S.A.F. members without charge. It is now available upon individual request.

(Editor's note: At a subsequent meeting of the Council, a report of which appears elsewhere in this issue, approval was given to the proposal to include *Forestry News* in the JOURNAL OF FORESTRY.)

Conclusion

Other matters brought before this meeting on which no specific action was taken were concerned with the eligibility of the graduates of certain accredited schools for S.A.F. membership and federal taxation policy on certain forestry investments.

In concluding the meeting, President Martin thanked the delegates for their assistance. He said that he intended to use all available means to consult the Sections and obtain their opinions on matters before the Council.

A similar joint conference will be held in connection with the national Society meeting in Seattle, October 11-13, 1949.

Report of Council Meeting and Actions Taken

A meeting of the Council was held in the Hotel Statler, Boston, on December 15 and 17, 1948.

A quorum, consisting of the following officers and members, was present: C. S. Martin, president, C. F. Evans, vice president, Paul M. Dunn, Charles H. Flory, William B. Greeley, Clarence S. Herr, Richard E. McArdle, DeWitt Nelson, and John H. Spencer. (Willis M. Baker and James C. Evenden were unable to attend.)

Henry Clepper, executive secretary, Robert D. Hostetter, assistant executive secretary, and Miss L. Audrey Warren, business manager, represented the executive office.

The following report summarizes the matters

of Society business discussed and the actions taken.

Budget for 1949

A balanced budget for 1949 was presented. The Council commended the Finance Committee (Sam R. Broadbent, chairman) for the thorough consideration given to the budget, which as submitted was approved with the addition of the cost of mailing a referendum to the membership on the O & C lands and the inclusion of *Forestry News* in the JOURNAL OF FORESTRY.

The Council ordered *Forestry News* discontinued as a separate publication. Hereafter, it will be combined with and make a special department of the JOURNAL.

The budget as approved provides for estimated income of $74,450 and estimated expense of approximately $72,000. See Table 1.

Projects considered desirable and necessary by the Council, but not included in the budget were the preparation of a Society directory, larger quarters for the Washington office, and an additional eight pages for the JOURNAL OF FORESTRY. Cost of these projects was estimated at $5,500.

Col. Greeley made a motion, seconded by Mr. Evans, that, in view of the probability of greater income than indicated by the budget, the Council authorize an additional contingent budget for emergent items to be put into effect when additional money is in hand, keeping within the policy of nondeficit spending. Motion carried.

Col. Greeley then made a motion, seconded by Mr. Herr, that the following projects are authorized in the contingent budget, their priorities to be set by the executive secretary with the approval of the president:

1. Membership directory together with revised Constitution and Bylaws	$2,500.
2. Additional office space	1,000.
3. Eight additional pages in JOURNAL OF FORESTRY	2,000.

Motion carried.

By way of explanation of the need for more office space, the Council recognizes the fact that certain inefficiencies exist because of already crowded conditions. But with the coming resignation of Dr. Hardy Shirley as editor-in-chief of the JOURNAL OF FORESTRY, and the need at least temporarily, of assigning this editorial work to the executive secretary, present office space will be entirely insufficient.

Another matter considered by the Council was a revision of the pension plan for Society employees. A revision is considerd necessary in view of the high living costs and the inadequacy of the plan now in operation to afford on retirement more than the equivalent of social security benefits, to which Society employees are not at present entitled. However, action by the Council was deferred pending possible liberalization by Congress of the Social Security Act which might entitle Society employees to the benefits of the act.

Referendum on O & C

A petition to hold a referendum on certain aspects of proposed legislation with respect to the Oregon and California Revested Lands had

TABLE I.—PROPOSED BUDGET FOR 1949
DECEMBER 1, 1948—NOVEMBER 30, 1949

Item	
Estimated expense	
JOURNAL OF FORESTRY and *Forestry News*	$23,600.00
Editor's expense	500.00
Advertising travel	100.00
Salaries—Executive Secretary and Assistant	12,400.00
Salaries—office staff	20,860.00
Travel—officers	3,000.00
Postage	1,300.00
Telegraph and telephone	400.00
Rent	1,440.00
Multigraph and mimeograph	300.00
Miscellaneous printing	650.00
Office supplies	600.00
General expense	700.00
Depreciation	350.00
Pension plan	539.46
Natural Resources Council	200.00
Committee expense	150.00
Grading forestry schools	100.00
Annual meeting	850.00
Contributions	50.00
Council travel expense	1,250.00
Referenda	900.00
Division expense	50.00
American Institute Biological Sciences	100.00
Proceedings, contingent fund	1,500.00
Reprints, Constitution and Bylaws	100.00
	$71,989.46
Estimated income	
Dues	$60,000.00
Fees	3,000.00
Subscriptions and sale of JOURNALS	7,500.00
Advertisng	2,400.00
Interest and dividends	500.00
Books	500.00
Reprints	150.00
Handbook of Information	200.00
Miscellaneous income	200.00
	$74,450.00
Income	$74,450.00
Expense	71,989.46
Estimated net earnings	$ 2,460.54

been received by the Council last October from Prof. H. H. Chapman. Action on the petition was deferred until this meeting of the Council in order that the subject might have full consideration through discussion.

(The petition and supporting statements are published elsewhere in this issue, pages 153-155.)

Prof. Chapman appeared before the Council in explanation of the position taken by the petitioners.

The Council approved the referendum and instructed the executive secretary to submit it to the membership for mail vote in accordance with Article XII, Section 3 of the Constitution and Bylaw 54.

Statements *pro* and *con*, of equal length, are to accompany the ballot in order to assist the voters in their consideration of the question.

History of Forestry

Robert K. Winters, chairman of the Committee on the History of Forestry, appeared before the Council and presented an outline of the work in progress. (Refer to his committee report on page 128 of this issue.)

The proposed book will run over 300 pages and will contain twenty-one chapters. Deadline date for submitting copy to the printer has been set as September, 1949, in order that the book may be published and offered for sale in advance of the 50th anniversary meeting of the Society in Washington, D. C. late in 1950.

The executive secretary was instructed to determine ways and means of publishing it in an attractive format.

The Council authorized Mr. Winters to replace any proposed authors who cannot supply their chapter articles to meet the deadline.

Journal of Forestry

Dr. Hardy L. Shirley, editor-in-chief of the JOURNAL OF FORESTRY, appeared before the Council and made the following report.

His resignation was accepted with regret and the Council commended him on outstanding service which he had rendered to the Society.

Until another editor can be obtained the editorship of the JOURNAL OF FORESTRY will be taken over by the executive secretary at the Washington, D. C. headquarters of the Society.

To the Council.

Subject: Resignation of the Editor-in-Chief of the JOURNAL OF FORESTRY.

With the publication of the April 1949 issue I will have completed three full years as editor-in-chief of the JOURNAL. As you can well appreciate, it has taken a great deal of my time and energy to carry this extra burden, time which should have been devoted to my duties at the College of Forestry and time also that should have been devoted to professional reading and advancement. To be sure, this has not been lost time. However, I have discussed this with Dean Illick and both of us feel that I should resign the editorship. I wish you, therefore, to consider this as my formal request to be relieved of the editorial duties beginning with the May issue this spring. This will give the Council four months' time to find a new editor. I feel that our Society has among its membership others well qualified to perform this task.

It may help you in seeking a new editor to have my estimate of the effort the job entails. You have already received the report I prepared for the membership on the progress of the JOURNAL during the past year. I will try, therefore, to translate some of the figures given to the membership into terms of work hours required of the editor. A rough estimate of the time it requires of the editor-in-chief to get out one issue of the JOURNAL is as follows:

	Hours
Full-length manuscripts that are published in the JOURNAL	8
An equal number of manuscripts returned to authors for revision or rejected	12
Notes, "We Present" items	3
Editorial writing[1]	10
Fillers	2
Correspondence and soliciting of material	4
Scheduling manuscripts	1
Total	40

An additional 40 hours is required by my secretary who handles the clerical work incidental to the editorial tasks. The job, therefore, represents at least one-half time work of a full-time employee. Actually, as I point out in my report to the members, a far better job could be done if more time were devoted to the JOURNAL than I have been able to spare.

HARDY L. SHIRLEY,
Editor-in-Chief.

Eligibility to Membership

The following report was made to the Council by the Committee on Accrediting with respect to the eligibility to Junior Membership of graduates of accredited schools of forestry whose major specializations are other than in the recognized forestry curricula.

To the Council:

Pending a Society referendum on the subject, the Committee on Accrediting Schools of Forestry recommends the adoption of the following:

To be eligible for membership in the Society of American Foresters immediately following graduation, the individual must have graduated from an accredited

[1] If guest editorials were used this time could be reduced to about 4 hours.

school of forestry in a curriculum with the following required professional courses:

Silviculture	semester course.
Based on	
Ecology	semester course.
Botany	
Plant physiology	two semester course.
Dendrology	
Soils	semester course.
Protection	semester course.
Management	semester course.
Based on	
Mensuration	semester course.
Surveying	semester course.
Mathematics	through trigonometry.
Economics	semester course.
Based on	
General economics	semester course.
Utilization	semester course.

In examining a curriculum, the main objective should be to verify that the individual has had a reasonable amount of formal instruction in each of the five fields and that each field is suitably grounded in the basic sciences.

If this be the case, then no penalty should be exacted because the individual lacks somewhat from the requirements as expressed in terms of semester courses. On the other hand, lacking adequate coverage in the basic courses, the cirriculum should provide approximately equal time in the professional courses.

In applying the foregoing basis for membership, the Society will accept the decision of the head of each forestry school as to which curricula of that school comply.

J. LEE DEEN,
P. A. HERBERT,
WALTER MEYER,
R. B. THOMSON,
MYRON KRUEGER, *Chairman.*

Professional Base of Society Membership

A Council Committee on Membership Requirements and Dues (W. B. Greeley, chairman) submitted a report at the Council meeting on June 9-11, 1948. This report, published in the JOURNAL OF FORESTRY for August 1948 (page 621), was the basis for certain Constitutional amendments, including increases in dues, voted on by the membership in November 1948.

However, one portion of this committee report was not submitted for referendum ballot because of a dissatisfaction with it, expressed by the Intermountain Section, which requested further opportunity for discussion and possible revision. The item in question was "1. Professional Base of Society Membership" (JOURNAL of August 1948, page 622). Additional correspondence on this subject was published in the JOURNAL for October 1948 (page 787) and for December 1948 (page 943).

Col. Greeley recommended to the Council a redraft of question 2 in the questions proposed for referendum vote as approved by the Council on June 9, 1948. The membership will have two choices to vote on: (1) To retain present membership requirements; or (2) To liberalize membership requirements. (A two-thirds majority is necessary to amend the Constitution.)

The Council approved publication of the redraft of the proposed referendum, inviting suggestions to be considered at its meeting in June 1949.

The questions follow:

1. Shall the present professional base for membership be retained?

2. Shall Junior Membership be open to men of professional training, equivalent to that required in forestry, in any form of wild land management, such as range, wildlife, recreation, water and soil, without distinction as to cover types, who have had:

(a) Either professional training in forestry equivalent to 25 percent[2] of that required of an accredited school of forestry?

(b) Or three years experience in any form of wild land management, together with a demonstrated interest in forestry?

3. Shall membership be open to men without training or experience in forestry, but with equivalent professional training or experience in any form of wildland management, range, wildlife, recreation, water and soil, without distinction as to cover types?

Foresters Field Manual

Mr. Clepper reported on the difficulty experienced in trying to get a suitable chairman with sufficient time at his disposal to compile the proposed foresters' field manual. (For a full explanation of this proposed project, refer to the report on this subject in the JOURNAL for March 1948, pages 201-205.)

It is evident that the preparation of the manual will require the full time services of an editor. Consideration was given to the possibilities of publication by a commercial publisher or by the Society. The executive secretary was instructed to continue investigating methods of publication and financing, and report to the Council.

Membership Cases

Two membership cases were considered by the Council, that of an Affiliate Member who unwittingly misrepresented his qualifications, and

[2]This in effect would consist of the basic course listed under "Eligibility to Membership" above.

that of a candidate for Junior Membership whose election has been protested for lack of technical training. The executive secretary was instructed to terminate the membership of the former; and to obtain additional information to refer his findings, in the case of the protest, to the Council for final action.

Amendments to Bylaws

The executive secretary was instructed to prepare for consideration of the Council changes in the bylaws made necessary by the recently adopted amendments to the Constitution.

Bylaw Governing Subsections

The president was authorized to appoint a committee to prepare for consideration of the Council a bylaw governing organization of subsections (or chapters) in accordance with the wishes of the Section delegates as expressed at their meeting on December 15. The proposed bylaw is to be submitted to Sections for study and comment.

National Forestry Objectives and Policies

No report was made by the Council committee, R. E. McArdle, chairman. The chairmanship was continued and a report will be given at the mid-year Council meeting.

Committee on Nominations 1949

The following committee on nominations was appointed for 1949: William Nace of Maryland, chairman, and C. R. Ross of Oregon, Harry Woodward of South Dakota, Bruce McGregor of Georgia, and M. E. Deters of Idaho.

Committee on Code of Ethics

The Committee on a Code of Ethics (Julius Kahn, chairman) was discharged with thanks. The Council will appoint a small committee, when need occurs, to consider any problems arising from adoption of the code.

Miscellaneous

At the suggestion of Tom Gill, chairman of Committee on International Relations, the Council voted to request that the United Nations Conference on Conservation and Utilization of Natural Resources be postponed until September in order not to conflict with the Third World Forestry Congress in Helsinki, Finland.

Mr. Spencer invited the Council to hold its mid-year meeting in the Black Hills in June.

A Petition for a Referendum

The following petition with explanatory statements was submitted officially to the Council on October 12, 1948. At the Council meeting in Boston on December 16, 1948, the Council members present (a quorum) voted to approve the referendum requested by the petitioners.

The petition is published herewith for the information of the membership of the Society, as required by the Constitution. When the ballot is submitted for vote, an accompanying statement will provide an opposing viewpoint so that members may consider both sides of the question.

The Petition

The undersigned, voting members of the Society of American Foresters, hereby request the Council of the Society that a referendum vote be taken of the Society membership, as provided in By-law 54, 2nd paragraph, on the provision contained in Bill S. 580 of the last Congress, which would transfer 462,000, acres of national forest lands in Oregon from the Forest Service to the Oregon and California office of the Department of the Interior, thereby increasing the grants to the affected Oregon counties from the 25 percent of gross income from national forests, to 50, and ultimately 75 percent of gross income. For the following reasons:

1. The language of the bill ostensibly provides for an exchange of existing lands between the two Services for consolidation, and this is unobjectionable, but actually provides for inclusion in the exchange of this additional area.

2. These additional lands have been included within the national forests for from 40 to 50 years, have been administered by the Forest Service, and have, up to recently, been acknowledged by the Interior Department as national forest lands.

3. No legal basis for such a transfer of jurisdiction has been acknowledged by the U. S. Attorney General's office.

4. There is danger that this bill will be reintroduced and passed by the incoming Congress unless national organizations act vigorously to block it.

Shirley W. Allen
J. H. Allison
Martin B. Applequist
Robert I. Ashman
Gregory Baker
Henry I. Baldwin
John S. Bancker
Charles W. Barney
Kenneth E. Barraclough
Ronald A. Bartoo
Byrant A. Bateman
Carlos G. Bates
Dow V. Baxter
Victor A. Beede
Frank K. Beyer
Richard T. Bingham
G. Norman Bishop
William C. Bramble
Randolph M. Brown
W. D. Brush
Ralph C. Byrant
Thomas S. Buchanan
John Carow
Gordon L. Chapman
Herman H. Chapman
Warren W. Chase
Fay G. Clark
Harold O. Cook
Robert Craig, Jr.
John S. Crosby
A. Bigler Crow
R. N. Cunningham
Samuel T. Dana
Kenneth P. Davis
J. Lee Deen
D. B. Demeritt
Merrill E. Deters
Donald P. Duncan
Harry J. Faulkner
John H. Foster
Percy W. Frazer
Louis J. Freedman
George A. Garratt
Charles G. Geltz
S. R. Gevorkiantz
Edwin L. Giddings
Leslie L. Glasgow
B. F. Grant
Paul C. Guilkey
John C. Gynn
Samuel G. Hall
H. L. Hansen
Ralph W. Hayes
Thomas V. Hellings
Donald F. Hervey
W. N. Hill
M. W. Humphrey
L. W. R. Jackson
Dwight S. Jeffers
Evert W. Johnson
Ernest F. Jones
Richard N. Jorgensen
Frank H. Kaufert
Clarence F. Korstian
Harold J. Lutz
W. C. MacAdam
Howard W. Mayne
H. Arthur Meyer
Walter H. Meyer
James W. Miller, Jr.
Charles O. Minor
Robert S. Monahan
Melvin S. Morris
Milton M. Mosher
Virgil D. Moss
Frank Murray
John P. Nagle
John R. Neetzel
Harold S. Newins
Newell A. Norton
E. C. O'Roke
W. M. Palmer
L. A. Patronsky
O. M. Patten
A. E. Patterson
Joseph B. Pike, Jr.
Henry A. Plummer
W. F. Ramsdell
Arthur G. Randell
L. W. Rathburn
Louis W. Rees
Raymond E. Rendall
Harris A. Reynolds
Arnold D. Rhodes
Marvin C. Riley
Richard C. Rose
C. A. Rowland, Jr.
Paul O. Rudolf
Victor J. Rudolph
W. H. Schaeffer
O. A. Schmidt
Henry Schmitz
W. C. Shepard
Horace F. Siemert
David M. Smith
Stephen H. Spurr
Myles Standish
E. H. Steffen
Harold W. Steinhoff
Lewis C. Swain
Herman E. Swanson
K. R. Swinford
Roy B. Thomson
H. E. Troxell
J. V. K. Wagar
T. A. Walbridge, Jr.
Frank O. Walters
Donald J. Weddell
R. F. West
W. E. White
B. M. Witherow
Ernest Wohletz
David Worley
A. C. Worrell
Edgar P. Wyman
Harold E. Young
Leigh J. Young
E. A. Ziegler

Explanatory Statement

New Haven, Conn.
December 1, 1948.

S 580 passed the Senate and blocked in the House on the last day of the session, contains the following wording, in Section 1:

"The authority of the Secretary of the Interior with respect to the administration of the revested Oregon and California Railroad grant lands shall be deemed to extend to, among other lands, all the unpatented lands in the odd-numbered sections included within the indemnity limits of the grant made to such railroad by the Act of July 25, 1866 (14 Stat. 239), as amended, and for which payment was made by the United States to such railroad or its successor in interest under the Act of June 9, 1916 (39 Stat. 218), except the portions of such unpatented lands which have been specifically placed under the jurisdiction of an executive department (other than the Department of the Interior) since June 7, 1916, by an Act of Congress."

The remainder of the bill provides for exchanging and consolidating the checkerboard sections now existing.

The above clause would add sections on 462,000 acres of national forest lands, all odd numbered, on which the railroad "title" was extinguished by payment from United States, and from which the counties never had any claim for revenue except as national forest land, under the 25 percent clause.

Discussion of this question appears in the JOURNAL OF FORESTRY, as follows:

Cox, H. J. On the Other Side of Certain Public Lands: Vol. 43: 315-321. Comments by S. T. Dana, 321-323.

Chapman, H. H. Some Legal and Administrative Aspects of the O. and C. Controversy. Vol. 43: 566-568. 1945.

The Cure for the O. and C. Situation. Vol. 43: 569-574.

Dana, S. T. Editorial: "Certain Public Lands." Vol. 42: 703-704. 1944.

Schmitz, Henry—S. T. Dana. Vol. 43: 931-933. 1945.

Chapman, H. H. The Society, the Council, and the O. and C. Vol. 44: 229-231. 1946.

Martin, C. S. and H. H. Chapman. Vol. 46: 709-712. 1948.

The Council took no action on this bill at the meeting in June 1948. Previous actions of the Council were, President Schmitz, 6 to 5 against action; under President Allen, 6 to 5 for opposing legislation to transfer these lands.

Objectives of Petitioners

In this petition, two important matters have been excluded, namely, the ultimate disposition of the O. and C. lands, and the character of the grants to 18 participating Oregon counties. The first is properly the subject of the Hoover Commission on Reorganization of the federal government, and your petitioners, as well as the Council take the attitude that this matter should be left to that commission. The second involves public policy and uniform treatment of public lands throughout the United States. For 1947-48 the payment to those counties on 2,518,800 acres of land amounted to $2,200,000 or about 88 cents per acre. These sums will increase in the future. Again, this matter should in our opinion be left for the Congress to decide on the basis of national policy.

The case is far different with the principle concealed in S 580 or its possible successor in the Congress. Here, instead of settling the matter by legal process, the bill proposes to grab 462,000 acres of national forest land for the further benefit of these counties, and confront the public with a fait accompli. We oppose this legislation in the interests of public morality and fair dealing.

This petition has nothing whatever to do with differences in interest or policy between two federal agencies. It is a straight issue of general public concern, similar to any other attempt to dismember the national forests in the United

States or Alaska. No member of the Forest Service has been consulted, nor has signed the petition. The issue is whether the Society membership can distinguish between an issue of national policy and a feud between departments. If the Society is to be "divided" as to the advisability of taking a stand on such a question, it would commit us to the policy of nonparticipation in affairs of national importance, and would deny to the membership the exercise of a function of professional societies as such. In this statement we believe we are expressing the views of the signers. The last official action of the Council is shown in Appendix.

VICTOR A. BEEDE,
H. H. CHAPMAN,
G. A. GARRATT,
ROBERT HOLDSWORTH,
LAURANCE W. RATHBUN,
HARRIS A. REYNOLDS.

Previous Favorable Action

At a meeting of the Council of the Society of American Foresters, held in St. Paul, Minnesota, May 16-18, 1944 consideration was given to H.R. 1688, a bill introduced by Mr. Ellsworth of Oregon relating to the administrative jurisdiction of certain public lands in the state of Oregon. The Council's attitude is as follows:

"The Council of the Society of American Foresters is opposed to the passage of H.R. 1688, which if approved would transfer 465,000 acres of forest land in Oregon from national forest status to O and C administration. The proposed legislation is unnecessary and unwise in the national interest for the following reasons:

"(1) The lands are already under the administration of a capable public agency.

"(2) The transfer would impose a checkerboard pattern of administration on an additional million or more acres of federally owned land, thus adding to the difficulties of protection and administration and unnecessarily dividing the responsibilities between the two different agencies of government.

"(3) The transfer would result in an inequitable distribution of revenues from a federally owned property that was never on the tax rolls and that differs in no important respect from the great bulk of federally owned forest land."

Typical Letter to Congress

March 26, 1946

Hon. Carl A. Hatch
Committee on Public Lands and Surveys
United States Senate
Washington, D. C.

Dear Senator Hatch:

The Council of the Society of American Foresters, after study of the legislation proposed in H.R. 2593 involving O. and C. lands in Oregon has adopted the following resolution by mail vote:

The Council of the Society of American Foresters, after careful study, believes that H.R. 2593 should not be enacted into law and urges its defeat because: (1) it would not be in the interest of efficient administration and equitable distribution of the returns from the lands involved and because: (2) the present administration of the lands should not be disrupted without careful, prompt, and thorough study by competent authority of the whole question of disposal and management of western public lands.

May I ask your careful consideration of this resolution in the National Interest.

Very truly yours,
S. W. ALLEN, *President,*
Society of American Foresters.

Report of Upper Mississippi Valley Section Meeting

Forty members of the Upper Mississippi Valley Section of the Society of American Foresters met on November 5 and 6, 1948 at the Coffman Memorial Union, University of Minnesota, St. Paul.

After introduction of new officers, the first committee report called for by Chairman George B. Amidon was that of the Economics Committee which was read by J. H. Allison. It covered the long-term timber sale contract bill and also a report on forest management of state owned forest land. The need for long term contracts is still being given serious consideration by the Legislative Research Committee.

Henry L. Hansen read the report of the Silviculture and Utilization Committee. E. L. Demmon indicated that the Northern Hemlock and Hardwood Association was interested in assisting in the publication of a handbook of good cutting practices for common forest types. He also suggested that the Minnesota Horticulture Society would be interested in the Silviculture Committee's report on winter injury, and action was taken to carry out that suggestion.

E. L. Lawson, in reporting on the minimum cutting regulation law, said that the law's exemption of land clearing by bona-fide farm owners was its weak link. The Silviculture and Economics Committees will study the law further and recommend improvements.

C. Robert Binger's report on forest management on county tax forfeited lands was accepted and the study of that problem will also be continued.

Following the above committee reports E. L. Demmon spoke on "The Forestry Situation in Minnesota and the Major Forestry Problems." Highlights of this talk dealt with the Section's recommendations to the state Legislative Re-

search Committee. These cover such things as increased funds for fire protection, the speeding up of availability of aerial maps for forest survey purposes by increasing funds for that purpose, the continuation of the forestry program of the Iron Range resources and rehabilitation project, the further consolidation of forest ownership by the various ownerships groups, the need for expanded forest research, and the planting needs of the state.

Frank H. Kaufert suggested the expansion of the Public Relations Committee activity to chapter level. P. O. Anderson emphasized the need for state money for forest management purposes. John V. Hoene suggested that copies of Section recommendations be sent to all members of the legislature.

A banquet and square dance were entertainment features on the evening of November 5.

Next day reports were given on the Christmas tree law by Dana C. Worrall; hemlock salvage on the Menomonie Indian Reservation in Wisconsin by William Heritage; activities of Public Relations Committee by E. L. Demmon; and state small timber scaling procedure by S. T. Dana.

Plans were also made for studying the following: farm forestry activities, larch sawfly situation, deer problem, railroad fire control, and the possibility of getting funds for forest management purposes.

Elmer L. Worthington invited the Section to Grand Forks, North Dakota for a summer meeting in 1949.

HENRY L. HANSEN,
Secretary-Treasurer.

Coming Events

Southern Pulpwood Conservation Association

The annual meeting of the Southern Pulpwood Conservation Association will be held in the Atlanta Biltmore Hotel, Atlanta, Ga. on February 9.

Henry Malsberger is forester for the association with headquarters in the First National Bank Building, Atlanta 3.

Southern Forestry Conference

A Southern Forestry Conference will be held in Montgomery, Ala., on February 18 and 19 under the auspices of the Forest Farmers Association of Valdosta, Ga.

Plans for the conference have been developed under the chairmanship of J. M. Stauffer, state forester of Alabama.

Allegheny Section

The winter meeting of the Allegheny Section will be held in Harrisburg, Pa., February 25 and 26.

Details may be obtained from the secretary, J. H. Mendenhall, 405 F & M Building, West Chester, Pa.

New England Section

The New England Section's annual winter meeting will be held in the Statler Hotel, Boston, March 3 and 4.

Details of the program may be obtained from the secretary, Robert S. Monahan, Hanover, N. H.

North American Wildlife Conference

The 14th North American Wildlife Conference will be held in the Statler Hotel, Washington, D. C., March 7-9.

Information about the program may be obtained from the Wildlife Management Institute, Investment Building, Washington, D. C.

A feature of the conference will be a meeting of the Society of American Foresters' Division of Forest-Wildlife Management on March 8.

Elections to Membership

Affiliate

Blalock, M. A., La.
Burkhalter, H. D., La.
Miller, Ezra R., Calif.
Nash, Robley W., Me.
Pigott, H. T., La.
Pratley, J. R., Calif.
Ray, F. A., La.
Startzel, R. J., Pa.
Terrell, C. E., Ill.

Associate

Anderson, W. R., Ohio
Arthur, M. B., Wis.
Martin, W. P., Ariz.

Junior

Applefield, M., N. C.
Bartley, H. N., Jr., Me.
Boyce, J. S., Jr., N. C.
Burgess, S. L., Me.
Byrd, J. W., Ala.
Carroll, T. A., Mich.
Clark, V. L., Ore.
Cohn, S. S., Calif.
Courtenay, J. H., Tenn.
Craig, W. C., N. Y.

Crupper, G., Pa.
Danielson, W. W., Miss.
Dodson, R. K., Fla.
Dowdy, F., Ala.
Dunston, R. L., Kans.
Eckhart, R. F., Ark.
Foulds, R. T., Jr., Vt.
Gleim, G. H., Ky.
Godson, L. W., Me.
Haliburton, F. L., Wash.
Hammond, J. L., Colo.
Harrison, F. L., Wash.
Hauk, P. I., Colo.
Hebb, E. A., La.
Hedlund, A., Me.
Hensel, J. S., N. Y.
Herndon, T. G., Fla.
Herrington, A. E., Ark.
Herrity, G. F., Wash.
Hisey, J. M., Wash.
Holsworth, C. W., Conn.
Huffman, J. E., W. Va.
Johnson, W. A., N. H.
Jones, J. C., N. C.
Kaupas, V., Ill.
Keiser, H. R., Me.
LeMay, P. V., Canada
Mann, R., W. Va.
Martinelli, M., Jr., Texas
McClure, M. W., Fla.
McKillop, T. D., Miss.
McMahon, J. T., Texas
Moore, J. E., Calif.
Morris, R. C., Miss.
Moyer, H. R., Jr., Fla.
Neith, C. H., Wash.
Nelson, M. R., Fla.
O'Brien, O. O., N. H.
Opdahl, A., Wash.
Osborn, R. M., Va.
Parker, J., N. C.
Parnelle, R. E., Jr., Fla.
Porter, E., Canada
Powell, R. D., Wash.
Reimer, T. F., Ga.
Richardson, T. L., Ore.
Roper, R. M., Jr., N. J.
Sasser, A. H., Ore.
Scheer, R. L., Ala.
Schluter, E. A., Fla.
Schrader, V. D., N. Y.
Seiger, T. W., N. Y.
Shaw, S. P., Mass.
Sidney, T. C., N. C.
Slankauckas, A. F., N. J.
Smith, G. W., N. C.
Smith, Ivan W., N. C.
Smith, J. M., Colo.
Spaulding, J. G., Wash.
Sonley, G. R., Canada
Stanberry, F. W., S. C.
Starkey, B. H., Ariz.
Stephens, E. P., Mass.
Strawn, W. H., Ariz.
Strawn, W. W., Wyo.
Tannehill, R. M., La.
Taylor, W. R., N. Y.
Thiede, R. W., Mich.
Vallad, W. H., Wash.
Wandell, W. N., Ill.
Wellberg, E. T., Minn.
Welliver, J. L., Minn.
West, Fred, N. C.
Wilson, J. E., N. Y.
Wright, J. D., Ala.
Zuckerman, B. M., Conn.

Senior

Anderson, E. W., Ore.
Armstrong, W. H., Ala.
Bruce, D., Miss.
Clark, S. F., Ark.
Cook, H. C., Mo.
Cooper, K. R., Wash.
Diller, Oliver D., Ohio
Droege, R. F., Calif.
Funk, T. E., Fla.
Gehrman, R. M., Wash.
Gorsuch, G. S., Wyo.
Haibach, D. J., Calif.
Harp, G. D., Colo.
Holmes, W. W., La.
Lively, J. N., S. Dak.
Maslack, J. S., Nebr.
McClellan, J. C., D. C.
Mountain, H. S., N. H.
Post, D. E., Miss.
Shumaker, K. I., Ind.
Slayback, H. R., N. J.
Smelser, A. W., Ore.
Smith, L. L., Ala.
Smith, N. F., Mich.
Weddle, D. O., Colo.
Wenger, K. F., S. C.
Iyer, N. K. A., India
Row, N. R., India
Yussem Favre, R. L., Argentina

Reinstatement

Associate

Connolly, F. A., Pa.

Junior

Cummings, L. J., Calif.
Haderup, G. S., N. Y.
MacCammon, G. W., Ohio
McDuff, C. E., N. Mex.
Mullin, G. B. P., N. H.
Wall, R. T., La.

Senior

Rawson, L. C., Mass.

Announcement of Candidates for Membership

The following names of candidates for membership are referred to the membership for comment or protest. The list includes all nominations received since the publication of the January JOURNAL without question as to eligibility. Names, addresses, education, and endorsements are given. The names have not been passed upon by the Council. Important information regarding the qualifications on any candidate which will enable the Council to take final action with a knowledge of essential facts should be submitted before March 15, 1949. Statements on different men should be submitted on different sheets. Communications relating to candidates are considered as strictly confidential.

Allegheny

Associate Membership

Cope, Francis R., Owner & Mgr., Woodcourne Orchards & Forests, Dimock, Pa.; Haverford College, A.B., 1900; Harvard Univ., A.M., 1902. Allegheny.

Junior Membership

Banasiak, C. F., Forester, W. Va. Dept. of Cons., Charleston, W. Va.; Mich. State, B.S.F., 1948. K. Dressel, P. W. Robbins, P. A. Herbert

Bennett, J. C., Asst. Dist. Forester, Md. State Dept. of Forests & Parks, Annapolis, Md.; Univ. of Me., B.S.F., 1948. A. G. Randall, G. Baker, R. I. Ashman.

Appalachian

Junior Membership

Montgomery, C. R., Park Rgr., U. S. Natl. Park Service, Roanoke, Va; West Va. B.S.F., 1943. W. C. Percival, M. Brooks, J. B. Byers.

Waters, W. E., Student, School of Forestry, Duke Univ., Durham, N. C.; N. Y. State, B.S.F., 1948. J. A. Beal, F. X. Schumacher, C. F. Korstian.

Central Rocky Mountain

Junior Membership

Johnson, W. M., Range Cons., Rocky Mtn. Forest Exp. Sta., Fort Collins, Colo.; Utah State, B.S.F., 1933; Univ. of Minn., M.S., 1938. Reinstatement.

Senior Membership

Norris, Harry L., Dist. Forest Rgr., U.S.F.S., Durango, Colo. Reinstatement.

Central States

Junior Membership

Kollmeyer, H. W., Forester, Mich. Dept. of Cons., Lansing, Mich.; Univ. of Mich., B.S.F., 1947. S. T. Dana, S. W. Allen, D. V. Baxter.

Columbia River

Junior Membership

Borglum, D. W., General Forestry, Weyerhaeuser Tbr. Co., Longview, Wash.; Iowa State, B.S.F., 1942. R. Kummer, D. N. Jeffers, T. R. Yocom.

Dahlin, V. W., Forester, Fermont Natl. Forest, Lakeview, Ore.; Oregon State, (Forestry) (4 yrs.). Columbia River.

Grover, E. T., Tbr. Foreman, Long-Bell Lbr. Co., Grand Ronde, Oregon; Univ. of Idaho, (Forestry) (4 yrs.). Columbia River.

Mason, H. F. R., Jr., Surveying, Mapping, Accounting, Tbr. Service Co., Sweet Home, Ore.; Yale, B.E., 1943; M.F., 1948. H. H. Chapman, W. H. Meyer, H. J. Lutz.

Williamson, F. E., Jr., Info. Spec., U.S.F.S., Portland, Oregon; Univ. of Mont., (3½ yrs.). Reinstatement.

Senior Membership

Bruckart, J. R., Jr., Forester, Arbor Plywood Corp., Portland, Ore.; Univ. of Wash., B.S.F., 1937. Columbia River (Jr. member, 1937).

Elliott, J. E., Jr., Dist. Rgr., U.S.F.S., Roseburg, Oregon; Univ. of Calif., B.S.F., 1935. Columbia River (Jr. member, 1936).

Keniston, R. F., Asst. Prof. of Forest Mgmt., Oregon State College, Corvallis, Oregon; Univ. of Calif., B.S.F., 1937; M.S.F., 1941. Columbia River (Jr. member, 1938).

Sandoz, A. J., Forester, Long-Bell Lbr. Co., Longview, Wash.; Oregon State, B.S.F., 1940. Columbia River (Jr. member, 1944).

Sandoz, Fred J., Asst. to Log Mgmt., Booth Kelly Lbr. Co., Springfield, Oregon; Oregon State, B.S.F., 1940. Columbia River (Jr. member, 1944).

Smith, J. B., Forester, Wallowa Natl. Forest, Enterprise, Oregon; Oregon State, B.S.F., 1939. Columbia River (Jr. member, 1941).

Starker, Bruce, Cons. Forester, T. J. Starker & Son, Philomath, Oregon; Oregon State, B.S.F., 1940; Yale, M.F., 1941. Columbia River (Jr. member, 1941).

Gulf States

Affiliate Membership

Dantzler, Louis E., Dist. Forester, Int. Paper Co., Mobile, Ala. Gulf States.

Junior Membership

Goddard, Ray E., Research Tech., Texas Forest Service, College Station, Texas; Univ. of Fla., B.S.F., 1947; M.S.F., 1948. E. A. Ziegler, H. S. Newins, P. W. Frazer.

Schulz, O. W., Forester, Brown Paper Mill Co., Inc., Monroe, La.; La. State, B.S.F., 1940. J. H. Kitchens, Jr., J. I. Ritchie, W. C. Valentine.

Senior Membership

Andrulot, E. R., Dist. Forester, Crossett Tbr. & Development Co., Crossett, Ark.; Univ. of Mich., B.S.F., 1939. Gulf States (Jr. member, 1939).

Coffman, C. S., Jr., Forester, Texas Longleaf Lbr. Co., Trinity, Texas; Univ. of Mich., B.S.F., 1937; M.F., 1937. Gulf States (Jr. member, 1938R47).

Davis, J. E., Asst. Dist. Rgr., U.S.F.S., Jackson, Miss.; La. State, B.S.F., 1941; Duke, M.F., 1947. Gulf States (Jr. member, 1943).

Ferguson, E. R., Supt., Harrison Exp. Forest, New Orleans, La.; La. State, B.S.F., 1938. Gulf States (Jr. member, 1939).

Gustin, H. E., Assoc. Prof., La. Poly. Institute, Ruston, La.; N. Y. State, B.S.F., 1930; M.F., 1932. Gulf States (Jr. member, 1936R47).

McConnell, W. V., Asst. Tbr. Mgmt., U.S.F.S., Lufkin, Texas; Pa. State, B.S.F., 1943. Gulf States (Jr. member, 1942).

Inland Empire

Junior Membership

Evans, S. S., Jr., Asst. Operations Supv., Bur. of Ento. & Plant Quar., Spokane, Wash.; Utah State, B.S., (Forest Mgmt.), 1948. F. O. Walters, M. C. Riley, K. G. Reinhart.

Senior Membership

Hardy, Charles E., Student, Univ. of Mich., Ann Arbor, Mich.; Mont. State, B.S.F., 1939. Inland Empire (Jr. member, 1944).

Viche, H. J., Forester, Kaniksu Natl. Forest, Sandpoint, Idaho. Inland Empire (Jr. member, 1943).

Intermountain

Junior Membership

Butler, J. J., Forester, U.S.F.S., Ogden, Utah; Colo. A & M., (Range Mgmt.), B.S., 1948. T. D. Phinney, E. P. Cliff, L. J. Farmer.

Kentucky-Tennessee

Junior Membership

Adams, John, Jr., Procurement Dept., Hillerich & Brodsby Co., Louisville, Ky.; W. Va. Univ., B.S.F., 1943; Univ. of Mich. M.F., 1947. S. T. Dana, R. Craig, Jr., D. V. Baxter.

Thede, R. W., Farm Forester, Ky. Div. of Forestry, Frankfort, Ky; Dartmouth, B.A., 1943; Yale, M.F., 1948. H. Nadler, L. A. Cromie, G. A. Garratt.

Senior Membership

Hurst, Edward, Forester, Cumberland Natl. Forest, Winchester, Ky.; N. C. State, B.S.F., 1937. Kentucky-Tennessee (Jr. member, 1938R48).

New England

Affiliate Membership

Schreier, W. J., Dist. Leader, Blister Rust Control, U.S.D.A., Cambridge, Mass. New England.

Junior Membership

Garland, B.B., Aerial Photo., Hollingsworth Whitney Co., Waterville, Me.; Univ. of N. H., B.S. (Forestry), 1942. New England.

Senior Membership

Averill, W. B., Mgmt. Staff Asst., U.S.F.S., Rutland, Vt.; Univ. of Me., B.S.F., 1920; Harvard, M.F., 1922. Reinstatement.

New York

Associate Membership

Morrison, J. L., Asst. Prof. N. Y. State College of Forestry, Syracuse, N. Y.; Univ. of Nebraska, A.B., 1933; M.A., 1935; Univ. of Calif., PhD., 1941. New York.

Junior Membership

Dewan, M. T., Chief Forester, Gould Paper Co., Lyons Falls, N. Y.; N. Y. State, B.S.F., 1940. J. E. Davis, C. F. Baar, D. P. Lum, Jr.

Johnston, S. J., Gen. Mgr., Adirondack Forest Mgmt. Service, Inc., Keene Valley, N. Y.; N. Y. State, B.S.F., 1929. H. J. McCasland, W. E. Petty, N. C. Brown.

Richards, D. B., Instr., N. Y. State, Syracuse, N. Y.; Colo. A & M., B.S., (Forestry), 1944; N. Y. State, M.S., 1947. J. S. Illick, N. C. Brown, R. J. Hoyle.

Suneson, V. C., Grad. Student, N. Y. State, Syracuse, N. Y. Univ. of Me., B.S.F., 1948. H. A. Plummer, A. G. Randall, R. I. Ashman.

Senior Membership

Bascom, S. G., Dist. Rgr., N. Y. State Cons. Dept., Albany, N. Y. (Jr. member, 1936).

Brinckerhoff, H. E., Executive Sec-Treas., American Pulpwood Asso., N. Y., N. Y.; Cornell Univ.; B.S.F., 1906. New York (Jr. member, 1924).

Northern California

Affiliate Membership

Brock, W. F., Assoc. Forest Rgr., Calif. State Div. of Forestry, Sacramento, Calif. Northern California.

Fenlon, James G., State Forest Rgr., State Div. of Forestry, San Andreas, Calif. Northern California.

Junior Membership

Corey, R. A., Field Aide, Div. Bur. of Ento. & Plant Quar., Berkeley, Calif.; W. Va. Univ., B.S.F., 1947. G. R. Struble, F. P. Keen, R. C. Hall.

Flynn, J. V., Fire Control Asst., U.S.F.S., Weaverville, Calif.; Oregon State, B.S.F., 1947. M. J. Nelson, P. M. Dunn, W. F. McCulloch.

Partain, G. L., Instrument Man, Draftsman, Party Chief, Humboldt County, Eureka, Calif.; Oregon State, B.S.F., 1948. G. H. Barnes, P. N. Knorr, W. F. McCulloch.

Scholberg, C. B., Tbr. Mgmt. Asst., U.S.F.S., Blairsden, Calif.; Univ. of Minn., B.S.F., 1939. R. A. James, R.C. Janes, R. W. Bower.

Senior Membership

Alberico, F. J., Forester, U.S.F.S., Upper Lake, Calif.; Colo. A & M., B.S.F., 1937. Northern California (Jr. member, 1940).

Gray, J. L., Cons. Forester, Sonora, Calif.; Univ. of Calif., B.S.F., 1935. Northern California (Jr. member, 1935R48).

Roseberry, R. D., Forester, Diamond Match Co., Chico, Calif.; Univ. of Calif., B.S.F., 1934. Northern California (Jr. member, 1934).

Wagner, R. G., Forest Mgr., Masonite Corp., Ukiah, Calif.; Univ. of Minn., B.S.F., 1932; Univ. of Wash., M.F., 1933. Reinstatement.

Puget Sound

Associate Membership

Brooks, A. M., Puget Sound Mgr., Pope & Talbot, Inc., Port Gamble, Wash. Puget Sound.

Junior Membership

Mavor, F. D., Forest Engr., Sedro Wooley, Wash.; Univ. of Wash., B.S.F., 1936. Reinstatement.

Reekers, C., Lab. Tech., Washington Veneer, Olympia, Wash.; Univ. of Wash., B.S.F., 1941. G. D. Marckworth, B. L. Grondal, J. C. H. Robertson.

Rodarmel, J. R., Sales Trainee, Ehrlich-Harrison Co., Seattle, Wash.; Purdue Univ., B.S.F., 1943; M.S.F., 1948. P. G. Haddock, B. L. Orell, S. P. Gessel.

Senior Membership

Larson, W. H., Asst. Chief Fire Warden, Wash. Forest Fire Assoc., Seattle, Wash.; Univ. of Wash., B.S.F., 1940. Puget Sound (Jr. member, 1940).

Southeastern

Affiliate Membership

Sizemore, E. T., Dist. Forester, Div. of Forestry, Montgomery, Ala. Southeastern.

Junior Membership

Arnold, C. A., Student, Univ. of Ga., Athens, Ga.; Univ. of Ga., B.S.F., 1948. G. N. Bishop, A. E. Patterson, A. C. Worrell.

Belcher, H. J., Forester, Rayonier Inc., Fernandina, Fla.; Yale, M.F., 1948. H. H. Chapman, W. H. Meyer, E. V. Zumwalt.

Hartsfield, D. R., Field Repre., Gibson Paperwood Co., Inc., Ocala, Fla.; Univ. of Fla., B.S.F., 1947. H. S. Newins, E. A. Ziegler, P. W. Frazer.

Livingston, K. W., Asst. in Forestry, Alabama Polytechnic Institute., Auburn, Ala.; Duke, M.F., 1948. H. E. Christen, T. D. Stevens, F. H. Vogel.

Sisley, J. F., Dist. Forester, Inter-state Land & Improvement Co., Macon, Ga.; Univ. of Ga,. B.S.F., 1939. E. T. Newsom, Jr., F. E. Stabler, N. R. Harding.

Smoak, G. W., Inspt., U. S. Dept. of Labor, Atlanta, Ga.; Univ. of Fla., B.S.F., 1939. H. S. Newins, E. A. Ziegler, P. W. Frazer.

Sonnen, D. T., Asst. to Chief Forester, Inter-state Land & Improvement Co., Macon, Ga.; Colo. A & M., B.S., (Forestry), 1948. E. T. Newsom, Jr., N. R. Harding, F. E. Stabler.

Senior Membership

Harris, Frederick, Forester, U.S.F.S., Tallahassee, Fla.; Univ. of Me., B.S.F., 1927. Southeastern (Jr. member, 1934).

Southern California

Affiliate Membership

Riley, P. A., Tech., (Electronics), U. S. Naval Lab., San Diego, Calif. Reinstatement.

Junior Membership

Hadley, K. W., Southern Pacific Wood Preservation Plant, Oakland, Calif.; Univ. of Calif., B.S.F., 1948. M. Krueger, K. Arnold, E. Fritz.

Southwestern

Junior Membership

Brown, R. L., Forester, Tonto Natl. Forest, Payson, Ariz.; Colo. A & M., B.S., (Range Management), 1948. B. Nelson, G. L. Olson, C. Otto Lindh.

Collins, E. H., Forester, U.S.F.S., Flagstaff, Ariz.; Univ. of Fla., B.S.F., 1948. C. O. Lindh, L. J. Putsch, E. P. Ancona.

Cutler, D. D., Forester, Santa Fe Natl. Forest, Santa Fe, New Mexico; Cornell Univ., B.S.F., 1932; M.F., 1933. Reinstatement.

Dewey, Lynn M., Range Examiner, Navajo Indian Service, Window Rock, Ariz.; Univ. of Idaho, B.S., (Forestry), 1941. H. Weaver, J. V. Chiarella, C. Otto Lindh.

Mazzetta, A. J., Dist. Rgr., Carson Natl. Forest, Taos, New Mexico; Univ. of Calif., B.S.F., 1933. Reinstatement.

Pattison, L. W., Forester, U.S.F.S., Captain, New Mexico; Univ. of Wash., B.S.F., 1937. C. Otto Lindh, F. N. Newnham, D. M. Lang.

Schroeder, W. L., Range Exam., U. S. Indian Service, Whiteriver, Ariz.; Colo. A & M., B.S., (Forestry), 1933. Reinstatement.

Upper Mississippi Valley

Junior Membership

Gardiner, E. T., Assoc. Ext. Forester, Iowa State College, Ames, Iowa; Iowa State, B.S.F., 1948. A. F. McComb, D. M. Bensend, J. A. Larsen.

Inman, L. L., Grad. Asst., Forestry Dept., Iowa State College, Ames, Iowa; Iowa State, B.S.F., 1947. A. F. McComb, D. W. Bensend, J. A. Larsen.

Smith, R. A., Tbr. Estimator, Northwest Paper Co., Cloquet, Minn.; Univ. of Me., B.S.F., 1932. E. J. Jankowski, W. M. MacConnachie, Jr., D. E. Pierce.

Wasilewski, A. M., Crusier, Iron Range Resources and Rehabilitation, Hibbing, Minn.; Lvov Poly. Inst., Poland, Forest Engr., 1936. Upper Mississippi Valley.

Senior Membership

Hubbard, J. H., Regional Coord., Minn. Forest Service, St. Paul, Minn. Upper Mississippi Valley (Jr. member, 1942).

Keogh, J. A., Asst. Mgr., Botsford Lbr. Co., Slayton, Minn.; Univ. of Minn., B.S.F., 1940. Upper Mississippi Valley (Jr. member, 1942R47).

Stevens, R. E., Forest Mgmt., Iron Range Resources and Rehabilitation, Grand Rapids, Minn.; Univ. of Minn., B.S.F., 1923. Upper Mississippi Valley (Jr. member, 1925).

Zaylskie, J. J., Forester, N. Dak. Ext. Service, Fargo, N. Dak.; Pa. State, B.S.F., 1935. Upper Mississippi Valley (Jr. member, 1935R47).

Washington

Associate Membership

Betts, C. A., Hydraulic Engr., U.S.F.S., Washington, D. C.; Sheffield Scientific School, Ph.B., 1911; Univ. of Wisc., C.E., 1913. Washington.

Schoder, Fred, Info. Spec., U.S.F.S., Washington, D. C. Washington.

Junior Membership

McCarthy, Colleen, Forester, U.S.F.S., Washington, D. C.; Mont. State, B.S.F., 1948. E. C. Crofts, A. C. Cline, F. J. Flick.

Ripper, E. E., Biologist, U. S. Fish and Wildlife Service, Washington, D. C.; Pa. State, B.S.F., 1930. Reinstatement.

Wisconsin-Upper Michigan

Senior Membership

Ahlskog, R. H., Training and Safety Officer, U.S.F.S., Milwaukee, Wisc.; Univ. of Idaho, B.S.F., 1933. Wisconsin-Upper Michigan (Jr. member, 1940).

Arbogast, Carl, Jr., Silvic., Lake States Forest Exp. Sta., Rhinelander, Wisc.; N. Y. State, B.S.F., 1934. Wisconsin-Upper Michigan (Jr. member, 1935R46).

Barton, H. Allen, Forest Ranger, U.S.F.S., Munising, Mich.; Univ. of Mich., B.S.F., 1931. Wisconsin-Upper Michigan (Jr. member, 1934R46).

Biebesheimer, E. F., Nurseryman, U.S.F.S., Rhinelander, Wisc.; Mich. State, B.S.F., 1926. Wisconsin-Upper Michigan (Jr. member, 1937R47).

Blake, Joseph, Ranger, U.S.F.S., Watersmeet, Mich.; Mich. State, B.S.F., 1927. Wisconsin-Upper Michigan (Jr. member, 1938).

Brener, William H., Nursery Supt., Wisc. Dept. of Cons., Wisconsin Rapids, Wisc.; Univ. of Minn., B.S.F., 1930. Wisconsin-Upper Michigan (Jr. member, 1933).

Burkett, Luther B., Staff Asst., U.S.F.S., Rhinelander, Wisc.; Iowa State, B.S.F., 1930. Wisconsin-Upper Michigan (Jr. member, 1932R45).

Graves, Ralph L., Forest Ranger, U.S.F.S., Park Falls, Wisc.; Univ. of Minn., B.S.F., 1935. Wisconsin-Upper Michigan (Jr. member, 1936).

Harrington, C. L., Supt. State Parks and Forests, Dept. Cons., Madison, Wisc.; Univ. of Mich., B.S.F., 1913. Wisconsin-Upper Michigan (Jr. member, 1922).

Hesterberg, Gene A., Onstr., Dept. Forestry, Mich. Col. Mining and Tech., Houghton, Mich.; Purdue Univ., 1941; Univ. of Mich., M.S. (Wildlife) 1947. Wisconsin-Upper Michigan (Jr. member, 1943).

Iverson, Ray C., Asst. Supv., U.S.F.S., Rhinelander, Wisc.; Iowa State, B.S.F., 1928. Wisconsin-Upper Michigan (Jr. member, 1930).

Matthews, Harry, Forest Ranger, U.S.F.S., Kenton, Mich.; Univ. of Mich., B.S.F., 1929. Wisconsin-Upper Michigan (Jr. member, 1936).

Schneider, Arthur E., Civilian Emp., U. S. Army, Forestry Work, Korea; Univ. of Minn., B.S.F., 1931. Wisconsin-Upper Michigan (Jr. member, 1935).

Schneider, Howard W., Nursery Supt., U.S.F.S., Watersmeet, Mich.; Univ. of Mich., B.S.F., 1930; M.F., 1930. Wisconsin-Upper Michigan (Jr. member, 1935R46).

Shevlin, Charles E., Park Supt., Natl. Park Service, Houghton, Mich.; N. Y. State B.S.F., 1928. Wisconsin-Upper Michigan (Jr. member, 1935).

Sloss, Ralph W., Adm. Asst., U.S.F.S., Milwaukee, Wisc.; Mich. State., B.S.F., 1911. Wisconsin-Upper Michigan (Jr member, 1939).

Staat, Frederick F., Staff Asst., U.S.F.S., Ironwood, Mich.; Univ. of Mont., B.S.F., 1929. Wisconsin-Upper Michigan (Jr. member, 1940).

Stewart, Calvin G., Asst. Staff Supt., Kimberly Clark Corp., Neenah, Wisc.; Univ. of Mich., B.S.F., 1939. Wisconsin-Upper Michigan (Jr. member, 1941).

Svensen, Harold A., Asst. Div. Chief, U.S.F.S., Milwaukee, Wisc.; Univ. of Wash., B.S.F., 1927. Wisconsin-Upper Michigan (Jr. member, 1944).

Wilson, Walter G., Forest Ranger, U.S.F.S., Manistique, Mich.; Univ. of Minn., B.S.F., 1925. Wisconsin-Upper Michigan (Jr. member, 1943).

Foreign

Corresponding Membership

Khan, M. A. Waheed, Asst. Cons. of Forests, Forest Dept., Central Provinces and Berar, India. Committee on International Relations.

Forestry News

Compiled by ROBERT D. HOSTETTER, *Assistant Executive Secretary*

Lincoln Green Demonstration Forest Honored

Pictured above are South Carolina foresters attending a ceremony at Lincoln Green Demonstration Forest, Dorchester, S. C., when the Southern Railway System was awarded a Certificate of Merit and a wooden Tree Farm plaque for "sound forest management and conservation." In the photograph from left to right standing: Donald A. Pomerening and Thomas Lotti, foresters, and L. E. Chaiken, silviculturist, Southeastern Forest Experiment Station, Charleston; W. Kay Conard, general forestry agent, Southern Railway Company, Dorchester, and W. J. Barker, leader, Forestry Extension Work, Clemson College. Seated: E. B. Price, J. R. Tiller and John C. Witherspoon, assistant state foresters, S. C. State Commission of Forestry, Columbia; J. L. King, county agent, Dorchester County; W. L. Hardin and J. B. Potter, district rangers, S. C. State Commission of Forestry, Walterboro.

Foresters of World Promote Global Resource Development

Meeting in Washington, D. C. during the last half of November, the Food and Agriculture Organization of the United Nations re-elected Viscount Bruce of Melbourne, Australia as Independent Chairman of the FAO Council.

Havana, Cuba was selected as the site of the next annual conference, but a special session may be called prior to that time to select a permanent headquarters for FAO.

The Conference welcomed the offer of the Brazilian Government to act as host for FAO's forestry and forest products working group for Latin America and asked that such a group be established soon. It endorsed plans for a forestry and timber conference for Asia, the Far East, and the Pacific area during 1949. The Conference approved plans for the early convening of a preparatory conference on world wood pulp problems, and expressed appreciation of an offer by the Canadian Pulp and Paper Association that the first session be held in Montreal. The Conference called attention to the harmful effects of "destructive nomadic agriculture, overgrazing, overcutting and burning in tropical and subtropical regions" and asked that the divisions of Forestry and Agriculture cooperate in studying those problems and that an international meeting of governments on land utilization in tropical and subtropical regions be convened.

FAO is sponsoring the Third World Forestry Conference to be held in Helsinki, Finland in 1949. Approxiamtely 40 foresters from the United States will attend.

Burroughs Is Products Chief

I. C. Burrough, former assistant chief of the Forestry Investigations Division of the Tennessee Valley Authority, has been appointed in charge of forest products in the materials division of the Munitions Board in the National Military Establishment.

Southern Forestry Conference Features Industry Assistance

Highlighting the theme, Pulp and Paper Industries' Contribution to Southern Forestry, Henry J. Malsberger, general manager of the Southern Pulpwood Conservation Association, will present the keynote address at the Southern Forestry Conference of 1949. It will be held in Montgomery, Ala., on February 18 and 19.

Other forestry leaders on the program include W. M. Oettmeier, president of the Forest Farmers Association, Valdosta, Ga.; Julian F. McGowin of the W. T. Smith Lumber Company, Chapman, Ala.; Lyle S. Watts, chief forester, U.S. F.S., Washington, D. C.; C. F. Korstian, Duke School of Forestry, Durham, N. C.; M. H. Collet, West Virginia Pulp and Paper Co., New York; M. L. Fleishel, Shamrock, Fla.; and J. H. Allen, president of the Florida Pulp and Paper Co. and vice president of the St. Regis Paper Co.

Winter Sports Use Increases

A 25 percent increase in visits to national forest winter sports areas anticipated this season by the U. S. Forest Service would bring the total to over 3,500,000. Since each enthusiast usually makes five visists, an attendance of 700,000 persons is indicated on ski, skating, and outing areas.

Most popular ski areas are: Big Pines on the Angeles, Timberline on Mt. Hood, Stevens on the Wenatchee, Alta on the Wasatch, Snow Basin on the Cache, Berthound Pass and Winter Park on the Arapaho, Silver Valley on the Lower Michigan, and Tuckerman's Ravine on Mt. Washington in the White Mountain National Forest.

New and improved areas and facilities were made ready for the increased use.

Forestry Legislation

Meeting for the last time on December 31, 1948, the Eightieth Congress allowed the Commission on Organization of Executive Branch of the Govrnent (Hoover Commission) until "not later than 70 days after the Eighty-first Congress is convened and organized" to make a "report of its findings and recommendations to the Congress." Therefore, a detailed report of the Commission will probably be submitted to Congress about the middle of March.

Four hundred forty-eight bills were introduced in the House of Representatives when the Eighty-first Congress convened on January 3, 1948. Among these were the following:

H.R. 427 (By Jackson of Washington) To establish a Columbia River Authority. Committee on Public Works.

H.R. 93 and 310 (By Miller and Welch of California) To authorize the American River Basin Development. Committee on Public Lands.

H.R. 11, 94 (By Boggs of Louisiana and Multer of New York) To establish a national housing objective and the policy to be followed in the attainment thereof, to facilitate sustained progress in the attainment of such objective, and for other purposes. Committee on Banking and Currency.

H.R. 55 (By Fernandez of New Mexico) To include certain lands in the Carson National Forest, N. Mex. Committee on Public Lands.

H.R. 348 (By Celler of New York) To provide increased Federal-aided public housing for families of low income. Committee on Banking and Currency.

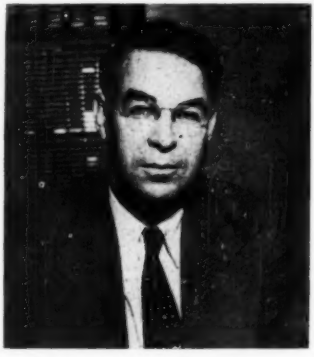
Mando Provides Tally Sheets

Distributed at cost, cruise tally sheets developed by the Lake States Forest Experiment Station are now available from the Minnesota and Ontario Paper Company, Minneapolis, Minn.

Minnesota Forestry Division Directed By Clarence Prout

The appointment of Clarence Prout as director of the state division of forestry, Minnesota department of conservation, has been announced by Conservation Commissioner Chester S. Wilson.

Mr. Prout has been with the Division of Forestry since 1925, starting



Wettschreck

CLARENCE PROUT

as a forest patrolman in the Hibbing district, and serving as silvicultural investigator, assistant in public relations, forest assistant, forester in charge of timber management, and deputy director of the division. The latter position he held since October 1, 1944.

He succeeds H. G. Weber who died in October.

S P A Cooperates In Duke Plan

Dr. C. F. Korstian reports that the Southern Pine Association is cooperating with Duke University in its program to enable graduates of the School of Forestry to secure one year of varied industrial forestry experience following receipt of their M.F. degrees.

Under this plan the employing company can determine the forester's best capabilities, and a record of the training period is made on the trainee's college record.

Conservation Leaders Awarded

Conservation recognition awards were made to William S. Rosecrans, chairman of the State Board of Forestry and an associate member of the Society of American Foresters, and to eight other Californians at the anual meeting of the California Conservation Council on November 16.

Also honored were Wallace I. Hutchinson, Information and Education Chief, Region 5, U. S. Forest Service, a forest conservation worker since the days of Theodore Roosevelt and Gifford Pinchot's famous "Baked Apple Club"; Mrs. Charles A. Christin, San Fernando DAR Conservation Chairman; William E. Colby, Berkeley, a leader in the State Park Movement; Phil Townsend Hanna, Los Angeles, editor of *Westways;* Geoffrey Morgan, Santa Monica, president of Shoreline Planning Association; Nicholas Roosevelt, Big Sur, councillor of Save-the-Redwoods League; Dr. Robert G. Sproul, president of the University of California; and Walter A. Starr, Piedmont, lumberman and leader in Sierra Club.

Governor Earl Warren and J. Sterling Morton, Santa Barbara, were elected honorary chairmen of California Conservation Week (March 7-14, 1949). Gen. Warren Hannum, state director of natural resources, was elected chairman.

Prevention Campaign Paying

Carl A. Gustafson, fire control chief of the U.S. Forest Service, believes that a 28-percent drop in the number of man-caused fires on national forests in 1948 represents progress in making the country more fire conscious.

Various agencies have been conducting forest fire prevention campaigns for 40 years. The drop was all the more significant, he said, because there were more campers, hunters, fishermen, and recreationists in the forests in 1948 than ever before.

Southeast Arkansas Foresters Hold Field Trip and Forum

The Southeast Arkansas Foresters, a group composed of foresters and industry representatives from South Arkansas, met December 6 in El Dorado for its bi-monthly field trip and forum on current forestry topics. Sixty-five members and guests were present.

A tour of the second-growth pine timber holdings of the Union Sawmill Company of Huttig was conducted by F. H. Wilson, manager, and David Malone, woods superintendent. Visits were also made to several of the company's growth and thinning plots, plantations, and pole and piling yard. In the evening the group returned to El Dorado where the Union Sawmill Company was host at a banquet, at which George Benjamin, field director of the Keep Arkansas Green Association, was the main speaker.

H. H. Chamberlin, head of the School of Applied Forestry at Monticello A & M College was reelected chairman of the group. Other officers elected were Russell Moberg, forester for Ozan Lumber Company, vice chairman, and Charles X. Grano, Crossett Experimental Forest, secretary-treasurer.

Logging Laboratory Proposed

At the third annual Lake States Logging Congress held in Ironwood, Mich., on September 23-25, Mr. Leland W. Hooker, timber technologist in the Forest Products Research Division, Michigan College of Mining and Technology, presented a proposal for the establishment of a Lake States Logging Laboratory. It was pointed out that the need for such a laboratory is evidenced by increasing interest in mechanization and modernization of logging equipment and techniques on the part of timber operators in the Lake States.

The logging laboratory would serve as a common meeting ground for timber producers, wood-consumers, and manufacturers of logging equipment. It would be a central point of action where timber harvesting methods and equipment could be tested and developed specifically for their application to the logging problems of the Lake States region.

The staff of the Forest Products Research Division, Michigan College of Mining and Technology, is composed of Dr. Hereford Garland, director; Arlie W. Toole, field technologist; Walter H. Koepp, chemical engineer; Leland W. Hooker, timber technologist; and Carl W. Danielson, assistant field technologist. Dr. Garland, Mr. Toole, and Mr. Hooker are Members of the Society of American Foresters.

Current projects of the division include hardwood fiber production and utilization; low-grade hardwood lumber utilization; and timber harvesting methods and equipment.

The program of the division is guided by an advisory committee composed of men in the timber producing and wood-using fields, with Mr. Abbott Fox as chairman.

N. C. Forest Service

North Carolina KEEP GREEN Committee Meets

The North Carolina Forestry Association's KEEP GREEN committee met on December 6 at the Hotel Sir Walter Raleigh, to complete plans for extending the KEEP GREEN organization to all counties.

Left to right in the above picture taken at the meeting are Robert L. Hoskins, of Norfolk, forester, Seaboard Air Line Railroad; Paul W. Tillman, chief of the N. C. Forest Service fire control branch; Roger Wolcott, forester for International Paper Co., both of Raleigh; William S. Edmunds, of Wananish, executive director of the N. C. Forestry Association; State Representative J. V. Whitfield, of Burgaw, chairman of the KEEP GREEN committee; and W. K. Beichler, state forester, of Raleigh.

Members of the Committee not present include R. W. Graeber, State Extension Forester of Raleigh; Don P. Johnston, of Wake Forest, president of the N. C. Forestry Association; and Fred W. Green, executive secretary of the N. C. Bankers' Association, Raleigh.

The statewide KEEP NORTH CAROLINA GREEN program, designed to reduce forest fires through educational methods, was inaugurated in November at Association's annual meeting and banquet in Raleigh.

Washington Wildlife Meeting Schedules Session Subjects

Topics of discussion to be featured at the Fourteenth North American Wildlife Conference have been announced by the Wildlife Management Institute, sponsors of the meeting which is scheduled for March 7, 8, and 9 at the Statler Hotel, Washington, D. C.

"Congress and Wildlife Resources" will be the subject discussed at the first general session on Monday morning, March 7. Other general session topics are "Waterfowl Challenges in '49," "Land and Water Policies," and "Rural Conservation Education."

"What's New in Management?" is the subject for the first technical session, followed by discussions of small and big game resources, fresh and salt water resources, and wildlife damage and controls.

Officials of the conference say that indications point toward the "largest and most important international conservation gathering ever assembled."

Natural Resources Council Confers With Ag Department

Sponsored by the Natural Resources Council of America, 40 representatives of member organizations met with Department of Agriculture leaders for two days in December to discuss current conservation problems.

General forest, range, soil, and water policies were discussed, as were the specific problems involved with hoof and mouth disease, development of Alaska, increased outdoor recreation, multiple-use dams, insecticide and herbicide research, conservation extension, and the depleted resources of other countries.

A similar conference was held with the Department of the Interior a year previously.

Gillett Named AFPI Director

Announcement was made December 15, 1948 of the selection of Charles A. Gillett as managing director of the American Forest Products Industries, Inc., a national educational association of lumber,

CHARLES A. GILLETT

pulp and paper, and plywood industries with headquarters at 1319—18th Street, Northwest, Washington, D. C., and field offices in New Orleans, Boston, and Portland, Ore.

Gillett succeeds Chapin Collins who resumed publication of newspapers he owns in the State of Washington. Collins had served with the forestry organization since 1943.

Gillett has been the chief forester for the American Forest Products Industries, and previously was forester for the Seaboard Air Line Railroad. Gillett also served as Arkansas' first state forester, as extension forester in Arkansas and North Dakota, and as assistant extension forester in New York State.

The association he now heads is national sponsor of the American Tree Farm program, the "Keep America Green" movement for forest fire prevention, and other projects to encourage better management and protection of forest lands. *Forestry Digest*, published monthly by AFPI, is available without charge to anyone requesting it.

Trustees recently elected are: Sydney Ferguson, Mead Corporation, Dayton, Ohio, reelected president of AFPI; Col. William B. Greeley, Port Gamble, Wash., chairman of the board of trustees; J. M. Brown, Northwest Timber Co., Spokane, Wash.; C. O. Brown, International Paper Co., New York; James L. Madden, Hollingsworth & Whitney, Boston; N. F. McGowin, W. T. Smith Lumber Co., Chapman, Ala.; and John B. Veach, Hardwood Corporation of America, Asheville, N. C.

Douglas-fir Filmstrip Ready

The story of Douglas-fir lumber, from tree farms to America's homes, is told in graphic style in a new filmstrip just released by the West Coast Lumbermen's Association through the Society for Visual Education of Chicago.

Called "The Story of West Coast Lumber," the 65-frame filmstrip will be distributed to 5,000 schools.

Prints of the filmstrip are available without charge for schools, organizations, and clubs by writing to Arthur K. Roberts at the West Coast Lumbermen's Association, 1410 S. W. Morrison Street, Portland 5, Oregon.

Heiberg Directs Silviculture At New York State College

Prof. Svend O. Heiberg became head of the department of silviculture at the New York State College of Forestry at Syracuse University on January 1, succeeding Edward F. McCarthy, now emeritus professor, who retired last spring.

Backrack

SVEND O. HEIBERG

A native of Denmark, and an American citizen since 1934, Professor Heiberg has been on the faculty at the college since 1927. He is nationally known as a silviculturist, having given forestry lectures to professional groups in Denmark in 1932-33 and in 1935-36, to officers and men of the American Military Government in 1943-44, and at Copenhagen, Stockholm, Oslo, and Oxford, England, in 1946-47.

Professor Heiberg was instrumental in developing the silviculture subject division of the Society of American Foresters in 1944 and served until 1947 as its first chairman. Author of more than 20 papers in scientific journals of Europe and America, he is especially interested currently in the creation of "natural areas" to preserve samples of the original forest flora; in classifying forest humus layers; and in the economic relationships of silvicultural practices.

Boston Meeting, Society of American Foresters, December 1948

Stuart Moir, who served as moderator on the Western private forestry panel, and Harris A. Reynolds, chairman of the Committee on Local Arrangements.

Albert W. Trueman, president of the Univ. of New Brunswick, who spoke at S.A.F. Banquet.

Samuel T. Dana presents L. Audrey Warren with silverware.

Clyde S. Martin, president of S.A.F., and Mrs. Martin.

H. H. Chapman, recipient of the Schlich Memorial Medal.

DeWitt Nelson and Paul M. Dunn proffer gifts to G. B. MacDonald, who recently retired from Iowa State College faculty.

Ralph G. Unger, J. K. Vessey, and J. H. Kitchens at meeting of newly organized Division of Public Relations.

Texas Dry Kiln Club Appoints Loughborough

The Texas Dry Kiln Club announces the appointment of Mr. W. Karl Loughborough as kiln tune-up man for sixteen contributing lumber firms in Texas. He has his headquarters at the Forest Products Laboratory, Lufkin, Texas. Mr. Loughborough will spend three months in Texas, and plans are being made to have him train a successor should the lumber industry desire to continue this service.

Mr. Loughborough is recognized as a world authority on the seasoning or drying of wood. He was on the staff of the United States Forest Products Laboratory, Madison, Wis. for 30 years, having retired on June 30, 1948.

In addition he will serve as consultant on cooperative chemical seasoning studies between the Texas Dry Kiln Club, Texas Forest Products Laboratory, and four hardwood firms in the use of Saligna, a promising salt used in seasoning refractory hardwoods. Mr. Loughborough is also special consultant for the Bay Chemical Company, New Orleans, La.

Idaho Begins Seed Project

E. W. Tisdale, associate professor of range management in the School of Forestry at the University of Idaho, Moscow, is heading a scientific study to determine some of the basic facts regarding pelletizing of seed and its place in reseeding of wild lands.

Several graduate students and seniors in forestry are assisting with the study which is being undertaken as a cooperative project with the School of Agriculture.

"The use of pelletized seed sown from airplanes for range and forest reseeding has received much publicity but little scientific study," according to Ernest Wohletz, associate professor of forest management at the University of Idaho.

F. S. Baker Appointed Dean

Prof. F. S. Baker, for more than 20 years a member of the staff of the forestry department of the University of California College of Agriculture, was appointed dean of the School of Forestry, effective January 1, 1949.

Kee Coleman

F. S. BAKER

Professor Baker was born in Bridgeport, Conn., and was graduated from Colorado College in 1912 with the degree of Forestry Engineer. He was in the Forest Service from 1912 to 1927, and then joined the forestry staff at the University of California. He has been acting dean of the School since the retirement of Walter Mulford, first dean of the school and for many years head of forestry work at the University.

Helicopter Squirts Water

Preliminary tests of the feasibility of pumping water from a helicopter to control small fires and retard ground spread of larger ones are being conducted on the Angeles National Forest in California.

Flying at 20 miles per hour at an elevation of 25 feet, 30 gallons of water covered a strip 3 feet wide and 60 feet long when a small orifice tip was used. Using a garden hose size outlet, the pattern was 12 feet by 32 feet.

Horning Named Chief In BLM Forestry Division

Walter H. Horning was appointed chief of the Division of Forestry in the Bureau of Land Management in January by J. A. Krug, Secretary of the Interior.

Serving as regional administrator for Idaho, Oregon, and Washington since 1946, Mr. Horning was chief forester of the Oregon and California Revested Lands Administration for eight years prior to that time, and has been in the Department of the Interior since 1935.

The Bureau of Land Management is responsible through its forestry division for the policies and administrative activities in the management, protection, and disposal of forest resources on approximately 177 milion acres of public land in the United States and Alaska.

Daniel L. Goldy, who has been serving since July 1948 as special assistant to the director of BLM in the development of forest policies affecting valuable timber resources on the O and C lands in western Oregon, has been selected to succeed Mr. Horning as regional administrator at Portland.

Logging Provides Deer Food

Timber sales arranged by the Michigan Department of Conservation have been planned in such a manner that the tops from cedars logged in swamps can be utilized by deer as a supplement to their winter food supply.

Areas to be cut from December to March are so spaced that the cutting will be economical to the operator, an improvement to the timber stand, and will provide deer with browse when most needed.

Enlarges Products Staff

The Forest Products Laboratory, Texas A. & M. College, Lufkin, Texas, has announced the employment of Paul Kramer and Woodrow King as forest products technologists.

Wildlife Specialists Review California Programs, Projects

Six wildlife management specialists have made inspection trips in California since October to review current wildlife programs and evaluate proposed projects, according to Seth Gordon who as consultant to the Wildlife Conservation Board is directing the survey of fish and game capabilities of the state.

These technicians and the fields of specialization in which their studies in California were conducted are Dr. A. S. Hazzard, director for fisheries research, Michigan Department of Conservation, trout and salmon fisheries; Dr. R. W. Eschmeyer, aquatic biologist, Tennessee Valley Authority, warmwater or spiny-ray fisheries; O. R. Kingsbury, supervisor of fish distribution, New York Conservation Department, fish hatcheries and rearing ponds; E. E. Horn, biologist, U. S. Fish and Wildlife Service, waterfowl; Dr. Arthur S. Einarsen, leader Oregon Cooperative Wildlife Research Unit, Oregon State Agricultural College, upland game birds; Dr. D. I. Rasmussen, in charge of wildlife management, Intermountain Region, U. S. Forest Service, big game.

In most cases these men will return this spring or summer to complete unfinished phases of their respective assignments.

When the program is completed a comprehensive statewide plan of action, as contemplated by the Wildlife Conservation Act of 1947, will be presented for the consideration of the Wildlife Conservation Board and all others concerned.

In the program to improve trout, waterfowl, and other game conditions in California Mr. Gordon has the cooperation of the California Division of Fish and Game, the U. S. Fish and Wdlilife Service, and numerous sportsmen's organizations.

Foresters In The News

JOHN A. BUTZ has been made management assistant in the Florida Forest Service. A Pennsylvania State College graduate, he has been employed as a project forester in Florida since 1944.

REX S. HARPER, recent University of Georgia graduate, has been appointed information and education forester in the Florida Forest Service's Ocala office. He replaces Robert K. Dodson who resigned to accept a position with the U. S. Forest Service.

WALTER H. LUND has succeeded Oliver F. Erickson, who retired December 31, as chief of the division of timber management, Pacific Northwest region of the U. S. Forest Service. Under the leadership of Erickson the present "patch" cutting system was inaugurated on the national forests in the Douglas-fir region. Since his entry into the Forest Service in 1927 Mr. Lund rose from ranger to forest supervisor, to staff assistant, and to his present position.

RAY YODER, who has been forester for Hollingsworth and Whitney Co. since 1942, resigned on December 15 to become assistant professor of forest management at Oregon State College.

Woodleaf Plan Dropped

The U. S. Forest Service announced in December that it has dropped its plan to establish a cooperative sustained yield unit at Woodleaf, Calif.

The plan, announced in February 1948, would have allowed the Forest Service to enter into a cooperative agreement with the Soper-Wheeler Company of Strawberry Valley, Calif., for coordinated management of the company's land and specified land in the Plumas National Forest, on a basis of sustained yield. Such agreements are authorized by the Sustained Yield Unit Act passed by Congress in 1944.

Folweiler Named Director of Texas Forest Service

Dr. A. D. Folweiler, of Natchitoches, La., accepted appointment as director of the Texas Forest Service, on January 1, 1949.

A. D. FOLWEILER

He will fill the place vacant since the resignation of W. E. White as director in March of 1948. Folweiler is a native of Pennsylvania. He took his bachelor of science in forestry at Pennsylvania State College in 1925; his master of forestry at Yale in 1934; and his doctor of philosophy in land economics and soils at the University of Wisconsin in 1943.

News Becomes Department

Commencing with this issue, *Forestry News* becomes a department in the JOURNAL OF FORESTRY, following action on the matter by the S.A.F. Council subsequent to a discussion with Section delegates at the Boston meeting of the Society.

Continuation of the excellent cooperation of individuals and organizations in supplying timely items of general interest is requested by the JOURNAL staff.

Southern Pulp Mill Capacity Quadrupled In Last Decade

In 11 years the southern pulp and paper industry has grown four times the size it was in 1936, Charles A. Connaughton, director of the Southern Forest Experiment Station in New Orleans, reported in releasing the final 1947 figures on southern pulpwood production.

The pulp report, which was compiled by William S. Stover and Albert L. Tofte of the Experiment Station, reveals that the South now has one-half of the total United States pulp-mill capacity and cuts 45 percent of the nation's pulpwood. "In 1947, pulpwood production in the South was 4½ percent higher than in 1946," Stover and Tofte said, "but as soon as 1948 figures are available, we expect them to show continued increases in both southern pulpwood production and mill capacity."

In commenting on this expansion of the southern pulp and paper industry, Stover said, "Today the South has 55 pulp mills in operation, with a daily capacity of about 18,500 tons of finished pulp. Five new mills went into operation in 1948—two at Macon, Ga., and one each at Savannah, Ga., Pensacola, Fla., and Natchez, Miss. Another mill is under construction at Childersburg, Ala., and plans for two more mills have been announced. Other companies are still looking for new mill sites."

L. A. Claims Superlative Tree

Californians have another superlative claim.

During the holiday season a mammouth Christmas tree, 96 feet in height, was erected at Pershing Square in Los Angeles. Cut on the Angeles National Forest, it is presumed to be the largest tree ever used for Christmas decoration, surpassing the 80-foot tree used in New York's Rockefeller Center in 1937.

BLM Chief of Grazing Named

The advancement of Gerald M. Kerr, formerly of Salt Lake City, Utah, to be chief of the division of grazing in the Bureau of Land Management, has been announced. He succeeds J. Will Robinson.

The Bureau of Land Management is responsible for the administration of livestock grazing operations on more than 150 million acres of public range land in the West under the provisions of the Taylor Grazing Act. Its activities include the planning and carrying out, in cooperation with the stockmen, of soil and moisture conservation and range improvement work for the benefit of the public range and the protection of Western watersheds. During the 1948 fiscal year, the Bureau supervised the grazing of more than 9 million cattle, sheep, horses and goats through licenses or permits issued to more than 20,000 operators.

Community Forests Pay Way

Of interest not only to Pennsylvanians but to residents of all communities contemplating the establishment of a community forest is a new 32-page, illustrated booklet issued by the Department of Forests and Waters in Pennsylvania.

Citing examples in Switzerland and Germany as well as many in the United States, the booklet, titled Community Forests in Pennsylvania, outlines the procedure to establish an area which might well help support the community financially and at the same time increase esthetic and recreational values.

Research Guide Available

Over 8,000 forest products research projects of 1,400 domestic and 700 foreign research agencies are classified in a revised edition of the Forest Products Research Guide now available from the National Lumber Manufacturers Association, 1319 Eighteenth Street, Northwest, Washington 6, D. C., according to C. A. Rishell, director of research. Cost of the Guide is five dollars.

Pearce Represents Foresters As Engineering Council Head

Professor J. Kenneth Pearce, College of Forestry, University of Washington, Seattle, is the newly elected chairman of the Puget Sound Engineering Council. The council is composed of representatives of 22 engineering, scientific, and technical societies with a total membership of 3,300 in the Puget Sound area. Objectives are to provide a meeting ground for cooperative action by its member societies on matters beyond the scope of individual organizations, to provide means for more effective public service and promote the public welfare, to foster public recognition of engineering and associated scientific societies, and to cooperate with other organizations having similar objectives.

Firm Makes Bricks of Shavings

Conventional concrete mixers and brick-making machines turn out building and insulating slabs at the plant of Milling In Transit Limited at Chambord Junction in Quebec's Lake St. John district.

Shavings are blown from the planing mill direct to a hopper from which they drop to a mixer for a seven-minute blending with Portland cement and several relatively inexpensive chemicals.

Patented by Fred Roth and Morris Debroy, the process produces two sizes of bricks that are fire-resistant, water-repellent, vermin-proof, non-corroding, and lightweight. After aging for three weeks they are mainly used locally for inside backing of exterior walls and for partitions.

School Forests Established

School forests have been established at each of the five high schools where agriculture is taught in Scotland County, North Carolina. County Warden A. R. McMillan instituted plans for their establishment and reported excellent cooperation by landowners, sawmill operators, and industrial plants.

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Box B, Journal of Forestry, Mills Building, Washington 6, D. C.

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Box C, Journal of Forestry, Mills Building, Washington 6, D. C.

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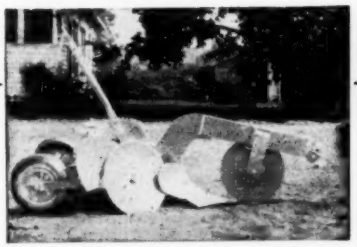

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